OCTOBER 1956

# PRINTING EQUIPMENT Engineer

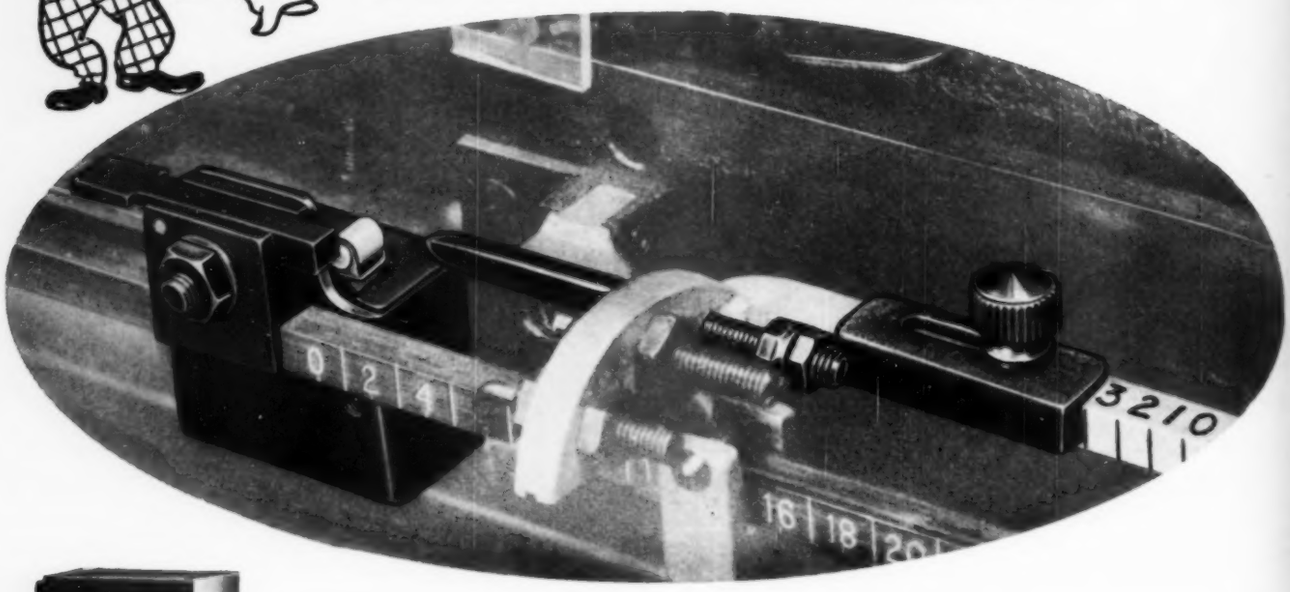
An Industry-Wide Technical Publication for Printing Plant Supervisory Executives

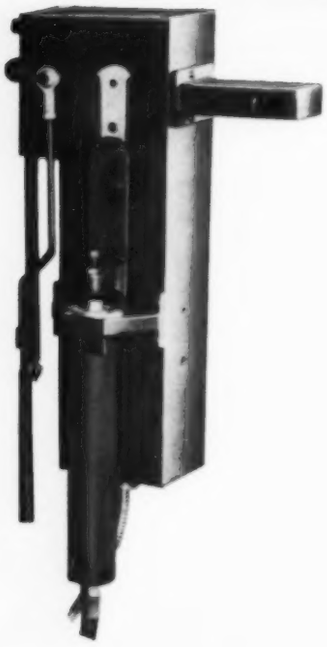
*In this Issue:*

- Production Controls for Magazine Printing
- How One Plant Effected Makeready Savings
- New Equipment Problem in Commercial Field

Louie Linecaster says:

# "THE SELECTRO-MATIC QUADDER AUTOMATICALLY QUADS SHORT LINES!"



The normal position for the Selectro-Matic selector is "left flush". All full lines will automatically justify, but all short lines will flush left. This is of particular value in setting straight matter and especially in book work where long measures are used and the widow line may be only one or two words in length. The operator is relieved of setting quads to fill up the white space. An exclusive advantage of the STAR Quadder is that this feature is extended, also, to the other quadding positions...center and right flush. For instance, in centering or flushing a list of names for imprints, etc., the appropriate button is selected and left in position until the job is completed. Any full line, set in between this copy, will automatically justify. Because short lines quad automatically, this device prevents hairlines caused by a "loose line artist" at the keyboard.

3078

This brochure with complete details is available. Write for your copy today!

Precision TRADE ★ MARK Parts

**STAR PARTS, Inc.**

SOUTH HACKENSACK, N. J

BRANCH: 1327 BROADWAY, KANSAS CITY, MO.

AGENCIES:

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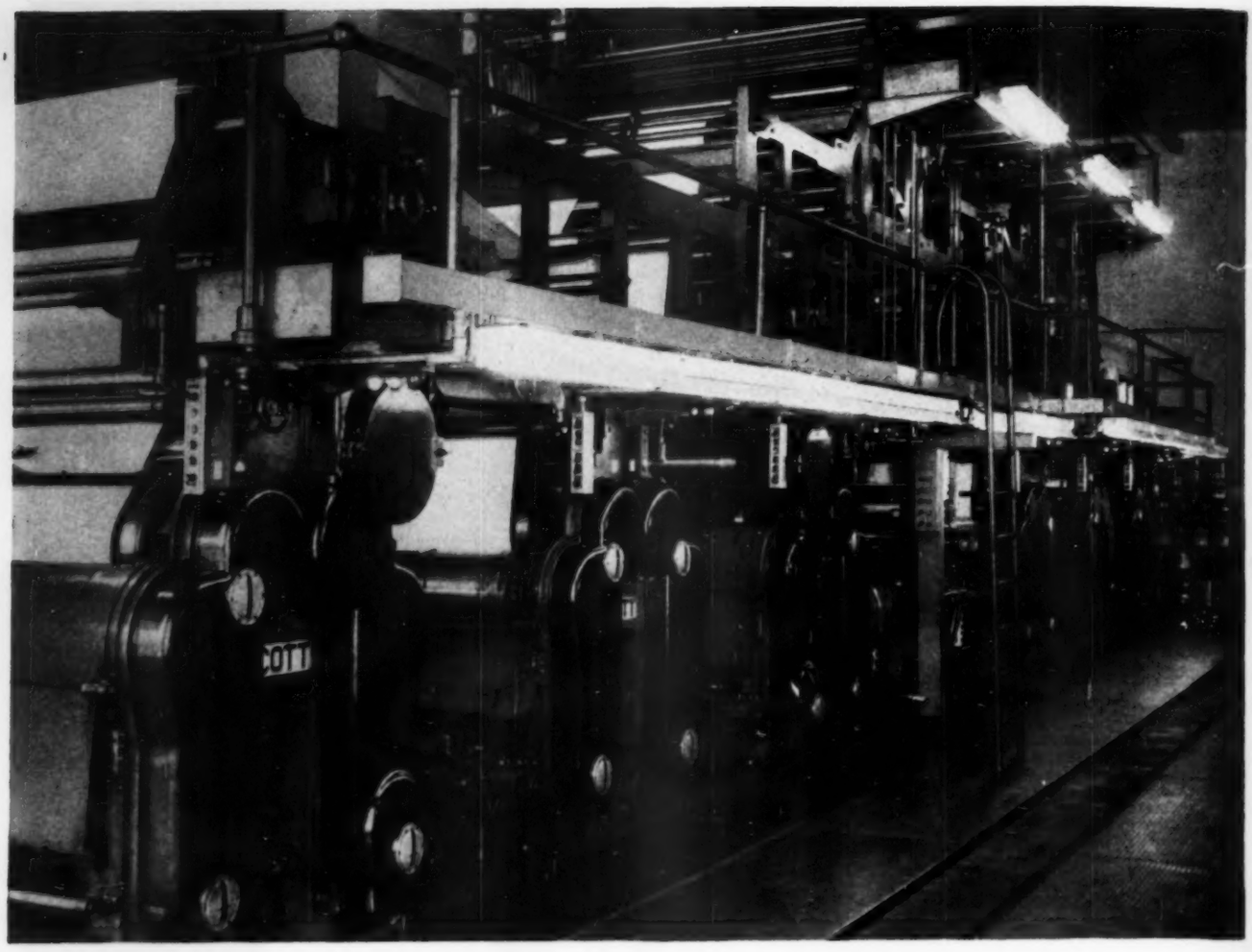
*This is the Sta-Hi Master Matcher. Used in conjunction with the Sta-Hi Master Trimmer, it makes possible precise registration of newspaper stereotype mats, resulting in closely registered first press proofs of r.o.p. and other color printing. It saves valuable production time and expense!*

STA-HI®



# SCOTT Superior Performance *PLUS* Utmost Flexibility

THIS Extra-High Speed Press by SCOTT recently installed at the WINNIPEG FREE PRESS, in Canada, is a prime example of the efficiency and flexibility of SCOTT equipment.

The installation consists of six straight line units with 3-color plate cylinders and 2-color couples with double ending arrangement. There are four single reverse drives.

It also has one pair of upper formers, equipped to run a tabloid section over these upper formers. This press was also equipped with four extra built-in color fountains and a SCOTT 3 to 2 double folder.

In addition to printing the Winnipeg Free Press daily, this press also produces a weekly tabloid, simultaneously with the printing of a full 4-color comic tabloid section.

The world-famous performance of SCOTT newspaper equipment originates at the design boards, and continues through every stage of manufacture.

5-56-1

***Buy with CONFIDENCE . . . Buy SCOTT***

## WALTER SCOTT & CO., INC.
**PLAINFIELD, NEW JERSEY**

the demand for *Weston*

# INDEX BRISTOLS

# GROWS and GROWS and GROWS

In the modern office, index bristols have come into their own. In the rag content grades, these colorful card weight stocks combine all the qualities needed for rapid handling, mechanical processing, quick identification and long, trouble-free service.

The complete line of Weston index bristols provides a wide range of grades, weights, sheet sizes and easy-to-identify colors to suit any application. They combine the finish of a high grade ledger with the toughness and backbone of a bristol — plus carefully controlled caliper to insure uniform thickness from card to card and lot to lot.

Wherever index is indicated, recommend and use a Weston index bristol.

## WESTON INDEX BRISTOLS

**EVERDUR INDEX**

Extra No. 1
100% Rag Content

A permanent index with a special finish that resists grime, grease and soil — and when soiled, can be cleaned with soap and water.

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All-rag quality for maximum durability and faultless performance. Recommended for permanent card records and hard-working index forms.

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**WINCHESTER INDEX**
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The most widely used grade . . . offering maximum choice of sizes, weights, colors.

**TYPACOUNT INDEX**
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25% Rag Content

An increasingly popular grade that will handle many assignments with complete satisfaction. Designed for wide utility with maximum economy.

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*Makers of Fine Papers for Business Records Since 1863*

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# HERALD-DISPATCH-ADVERTISER
## of HUNTINGTON, W. VA.
# Orders 64 Page WOOD Metropolitan
## *color-adaptable press*

ODERN 6 STORY BUILDING WILL
E ADDED TO PRESENT HUPCO
LANT TO HOUSE MECHANICAL
EPARTMENTS, EDITORIAL AND
USINESS OFFICE

- **PRESS SPEED** . . . 52,000 papers per hour
- **COLOR COUPLE** . . . for color printing "at will"
- **DOUBLE FOLDER**
- **WOOD STANDARD REELS** and Pneumatically Controlled **BELT TENSIONS**

**SEND FOR LITERATURE, DESCRIBING WOOD PRESSROOM EQUIPMENT**

**WOOD NEWSPAPER MACHINERY CORPORATION**

PLAINFIELD, NEW JERSEY

EXECUTIVE AND SALES OFFICE: 501 FIFTH AVENUE, NEW YORK 17, N. Y.

October 1956

An industry-wide technical magazine published especially for management, production and mechanical executives responsible for printing production and the specification of equipment and supplies used in the commercial, magazine, private plant and daily newspaper fields, covering major processes.

# PRINTING EQUIPMENT Engineer

Volume 87 Number 1

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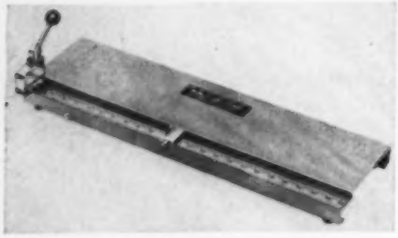
# Equipment and Supplies

If you wish additional information concerning equipment, supplies and/or technical literature, please make your request to PRINTING EQUIPMENT ENGINEER, 1276 West Third St., Cleveland 13, O.

### Step-and-Repeat Punch

The Chesley F. Carlson Co. announced its Carlson Step-and-Repeat punch, designed so the smaller offset platemaker can step images through use of register holes and



pins. The punch enables operator to step up and across either on plates or on film. It can be used in the darkroom and in punching masks for use of register pins in stripping operation. Dimension is controlled by setting of sighting edge to 1/32 in. on a stainless steel scale. The sighting edge cannot bend or lose accuracy, states sponsor. It is made with a dull black surface with recessed guide. It can be used to handle a 24 in. width. When positioned, the unit is locked by a thumbscrew that is part of the moveable pin. The tool steel punch is driven downward by a camming mechanism. Punch housing has a center line which enables operator to position the Carlson Master Strip so work will be in center of plate. Base is made of baked enamel surface, and all metal parts are plated. For further details, please mention PEE No. 235 in your request.

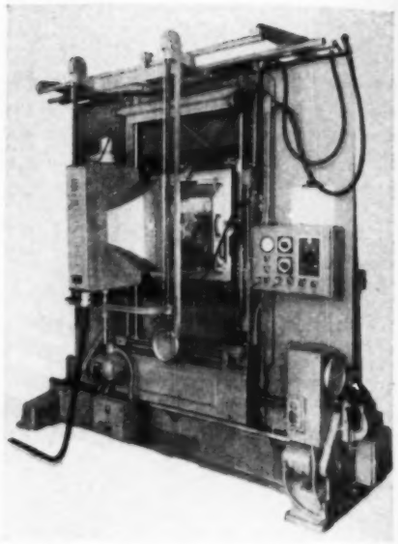
### Finishing Router Bits

The Geo. Tarpley Co. recently announced the addition of new plant equipment for super finishing of cutting edges of Super High-Speed router bits. The process is said to increase the sharp life of the tool by 35%. The method is also said to put a 8 to 10 micro-in. finish on the cutting edge of the tool. For further details, please mention PEE No. 246 in your request.

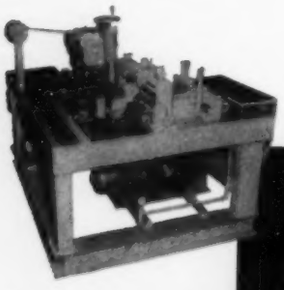
### Motor Controlled Lamps

A line of Constantarc motor controlled lamps, designed specifically for Rutherford photocomposers, has been developed by Macbeth Arc Lamp Co. Lamps are available in two models: Type B-1C-RM for Rutherford Type RM composers, and Type B-1C-R1 for the PL composing machine. The B-1C-RM is supplied in the 100 amp., 3 kw. model only. The lamp for Rutherford's Type PL composer is available in both 100 amp., 3 kw. and 140 amp., 6 kw. Both lamps feature a 12 in. trim of carbons, design that permits use of optional exhaust system and reflectors for evenness of illumination. Also featured is automatic arc control and self-compensat-

(*Continued on Page* 16)



**Macbeth Arc Lamp Co.'s model Constantarc B-1C-RM with optional exhaust system.**

Heavy duty cross feed magazine labeling machine with rotary head.

The Model S wrapping machine with inserting unit and rotary labeling head for installations mailing extremely large quantities of magazines at maximum speeds.

MAGAZINE WRAPPING OR MAGAZINE LABELING . . .

MAGNACRAFT MAKES A MACHINE

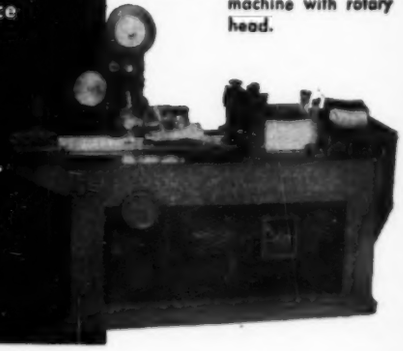
*for every Mailing Purpose!*

Wrapping or labeling . . . Magnacraft does either or both operations for you *faster* and *better* than ever before! *Magnacraft has sold more magazine wrapping machines than all other manufacturers combined!* Our experience can help you with the proper selection of the right labeling or wrapping machine to fit your particular needs. Find out for yourself how Magnacraft machines will cut your costs and reduce your mailing time!

Write for complete information now!

Model E — Combination wrapping and labeling machine. Magazines can be wrapped and labeled or labeled only on this heavy duty high speed production machine.

Straight feed magazine labeling machine with rotary head.



Magnacraft MANUFACTURING CO.

3138 W. CHICAGO AVE.
CHICAGO 22, ILL.

- ***Tempo Black Condensed Italic***
- Record Gothic Condensed
- ***Tempo Black Italic***
- Record Gothic Med. Extended
- **Condensed Gothic No. 2**

*Some recently produced*

# LUDLOW TYPEFACES

*for the Printing Industry*

- Record Gothic Extra Condensed
- Condensed Gothic Outline
- **Tempo Black Ex.**

**The attractive modern Ludlow typefaces shown on this page are some late additions to the ever-expanding program of design and production of Ludlow typeface matrices. This is evidence of the growing popularity of Ludlow typefaces among producers and users of newspaper and direct mail advertising. It is also one more reason for your serious study of the Ludlow system of job and display composition.**

**Ludlow Typograph Company** 2032 Clybourn Avenue, Chicago 14

The surest way to more printing production profits is to increase output of your present equipment without sacrifice in quality. And, if you can improve quality at the same time, you are competition and hard to beat!

# ANNOUNCING

## THE NEW, REVOLUTIONARY
## OXY-DRY SHEET CLEANER

**You BUY MORE PROFITS when you purchase the OXY-DRY SHEET CLEANER. Actual tests* show that your presses will deliver about 5% *more* impressions per hour, you'll stop the presses for wash-up about 12 times *less* per shift, save about 100 press sheets and the ink wasted in restarting after washups. This means that inside one year the OXY-DRY SHEET CLEANER will pay for itself...after that, it's all profits for you. Maintenance, repair and service will be negligible...the equipment is engineered to last the life of the press.**

**The OXY-DRY SHEET CLEANER is the *only* sheet cleaner that uses both air and suction ★ Operates within ⅛" of sheet for positive consistent cleaning action ★ Improves register control ★ Dry spray can be used *every* time sheet goes through the press ★ Can be installed in two hours on either web or sheet fed presses ★ Flexible—one vacuum-blower differential unit can be moved from press to press to operate any OXY-DRY cleaner head in your plant ★ Successful installations have been made in Meredith Publishing Co., Kable Bros., Popular Mechanics and other leading printing plants where speed and quality are constant aims...Increased profits they are getting can be yours too ★ To get more information on OXY-DRY SHEET CLEANERS, write, wire or phone us now.**

* 5 Color Cottrell 38" x 48"—Sheet Fed
More details on request

Patents granted and Pending
Copyright 1956

OXY-DRY *means more profits for the graphic arts industry*

## OXY-DRY SHEET CLEANER CORPORATION

1134 West Montrose Avenue, Dept. P E, Chicago 13, Illinois

NEW YORK **CHICAGO** SAN FRANCISCO

**Photo below shows close-ups of the OXY-DRY SHEET CLEANER vacuum-blower head and head face.**

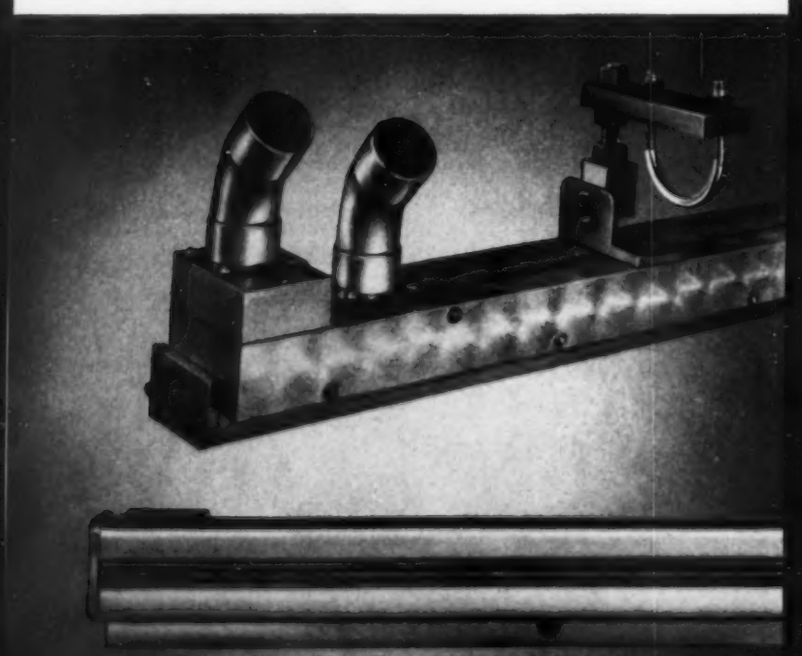
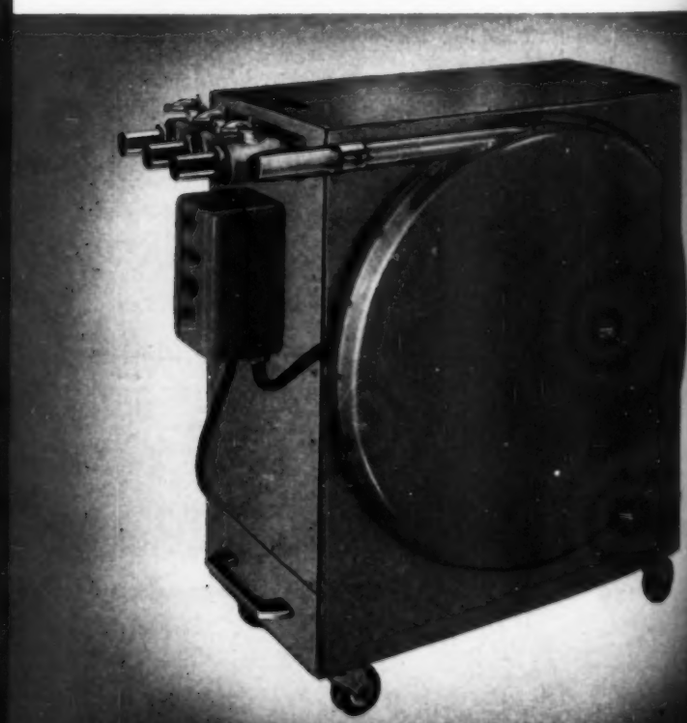


**Photo below shows the vacuum-blower differential unit for the OXY-DRY SHEET CLEANER**



# Challenge announces a *new improved* line of 19", 23", 26" and 30" POWER and LEVER PAPER CUTTERS

Fourteen new time saving, cost cutting improvements are provided in the new Series H line of Challenge Paper Cutters.

Cutting is up to 100% faster and easier. Knife changing is simplified. Performance is smoother and easier. In all, there are 14 definite engineering advancements that can benefit your cutting operations.

After you've checked, we are sure you'll agree these improvements make Challenge Power and Lever Cutters—already the outstanding paper cutters in their class—your best buy!

Now, more than ever, it will pay you to get a Challenge power-operated paper cutter or lever cutter for your operations, to replace old equipment or to expand your present paper cutting facilities. See your Authorized Challenge Equipment Dealer today or mail coupon for more information.

●

*Some of the improved features built into the new H Series Challenge Paper Cutters*

**FASTER CUTTING**
A new, power drive produces a 100% increase in the cutting speed of all Challenge Power Cutters. Cutter now operates at 28 strokes per minute—slightly more than 2 seconds per cut.

**AUTOMATIC KNIFE BAR RETURN**
On all 26½" and 30½" Challenge Power Cutters the knife bar returns to up position automatically after completing each cutting stroke.

**MORE OPERATING ROOM**
Front table of 26½" and 30½" Model-H Challenge Power Cutters now increased to 18½" in front of knife bar to provide easier handling of paper.

**NEW KNIFE BAR SAFETY DEVICE**
A new knife bar safety device prevents knife bar drifting down when power is shut off maintaining positive control of knife.

**EASIER KNIFE CHANGING**
Knife bar bolts are inside the side frame when the knife bar is up or down, making them more accessible for easier replacement of knife with knife bar in up position.

PC-103

**Check FIRST with**

**Challenge®**

**For PAPER CUTTERS**

**THE CHALLENGE MACHINERY COMPANY**
Office, Factories, Showroom:
**GRAND HAVEN, MICHIGAN**
**DEALERS IN ALL PRINCIPAL CITIES**

PEE-10

THE CHALLENGE MACHINERY COMPANY
GRAND HAVEN, MICHIGAN

☐ Please send more information on the New, Improved Challenge H Model Paper Cutters.

NAME_____ POSITION_____

COMPANY_____

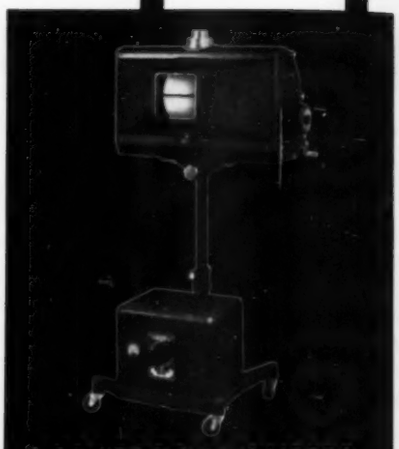
ADDRESS_____

# Be Sure that the

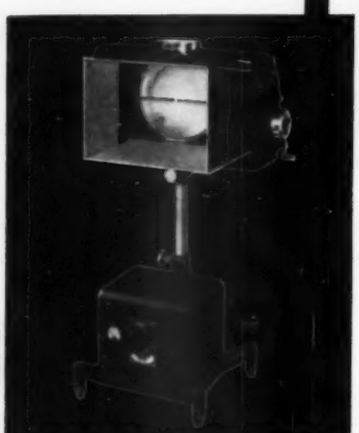
## arc lamps you buy are motor-driven

## —*fully automatic!*

# STRONG GRAFARC ARC LAMPS



**GRAFARC 95 AMPERE PRINTING LAMP**
For use with vertical printing frames under 40" x 50".



**GRAFARC 140 AMPERE PRINTING LAMP**
For use with vertical printing frames 40" x 50" and larger.

**FULLY AUTOMATIC • HIGH INTENSITY**

*Cut Time in Half on Process Exposures*

- Uniform Coverage of Large Areas
- Eliminate Dot Undercutting
- Constant Color Temperatures
- Eliminate Illumination Variables
- Accurate Control of Densities, Regardless of Line Voltage Variations
- Power to Punch Through Dense Kodachromes
- Sharper Reproduction

**Overhead model printing lamps available for use with horizontal printing frames. Burn in normal position, avoiding smoking of reflector and preventing ash from depositing on surfaces in the light path.**

**Models for Monotype Huebner MH photo composing machines assure precise control of intensity for accurate repeats.**

*Send for free literature or arrange for a demonstration by your dealer.*

**CHALLENGER CAMERA ARC LAMP**
Vertical trim. Burns at 75 amperes and 23 volts at the arc. Readily mounted on lamp support arms of any camera.

**THE STRONG ELECTRIC CORPORATION**
**307 CITY PARK AVENUE TOLEDO 2, OHIO**

Please send free literature on Strong Grafarc Lamps.

NAME_____
FIRM_____
STREET_____
CITY & STATE_____
NAME OF SUPPLIER_____

A SUBSIDIARY OF GENERAL PRECISION EQUIPMENT CORPORATION

TELETYPESETTER USER REPORT; Oak Ridge, Tenn.

# "Our investment in TTS equipment has more than paid for itself!"

Leigh Gerth, mechanical superintendent reading tape from wire "jitterbug." At his left, one of the Oak Ridger's three Linotype machines equipped with TTS Operating Units. The punched tape is fed automatically into the TTS Operating Unit producing a steady and continuous flow of type. Four hundred or more lines an hour on a standard linecasting machine, 600 or more on a high speed machine.

Virginia Turner, left, and Ellen Browning, the two Oak Ridger TTS Perforator operators turn out straight matter and classified at a rate of 400 or more lines per hour on the Perforator's typewriter-like keyboard. Beginners should produce usable tape a day or two after instruction and surveys show that within six months a good touch-typist can punch tape at 400 or more lines per hour.

## reports Publisher Don J. McKay of The Oak Ridger

It isn't easy to start a daily newspaper these days — particularly when you start from scratch as the Oak Ridger did on January 20, 1949.

"When we began our publication venture," writes Publisher Don McKay, "we had to line-up a great deal of equipment. Having seen Teletypesetter equipment used by other newspapers, we looked on TTS as a very basic newspaper production tool and automated our two second-hand Model 8 Linotype machines with TTS Operating Units.

"It is impossible for us to evaluate the added efficiency and economies of our TTS system over manual typecasting because we've never operated without it. I shudder to think of the manpower problems and added composing room expense we would have encountered had we not had TTS.

"Perhaps the best testimony to how well Teletypesetter has worked for us is that we have been able to meet the increasing demand for more type created by the rapid growth of our newspaper.

"When we purchased our third typesetting machine in 1951, a new Model 5 Linotype, we immediately had it equipped with a TTS Operating Unit.

"Two TTS perforators and a TTS Associated Press wire tape circuit produce the tape required to feed our three Linotypes. Two girls operate the perforators and each punches 400 or more lines per hour.

"I believe our investment in Teletypesetter equipment has more than paid for itself. In fact, I consider that TTS has contributed to our publication success by providing us with a constant supply of type at a very reasonable cost."

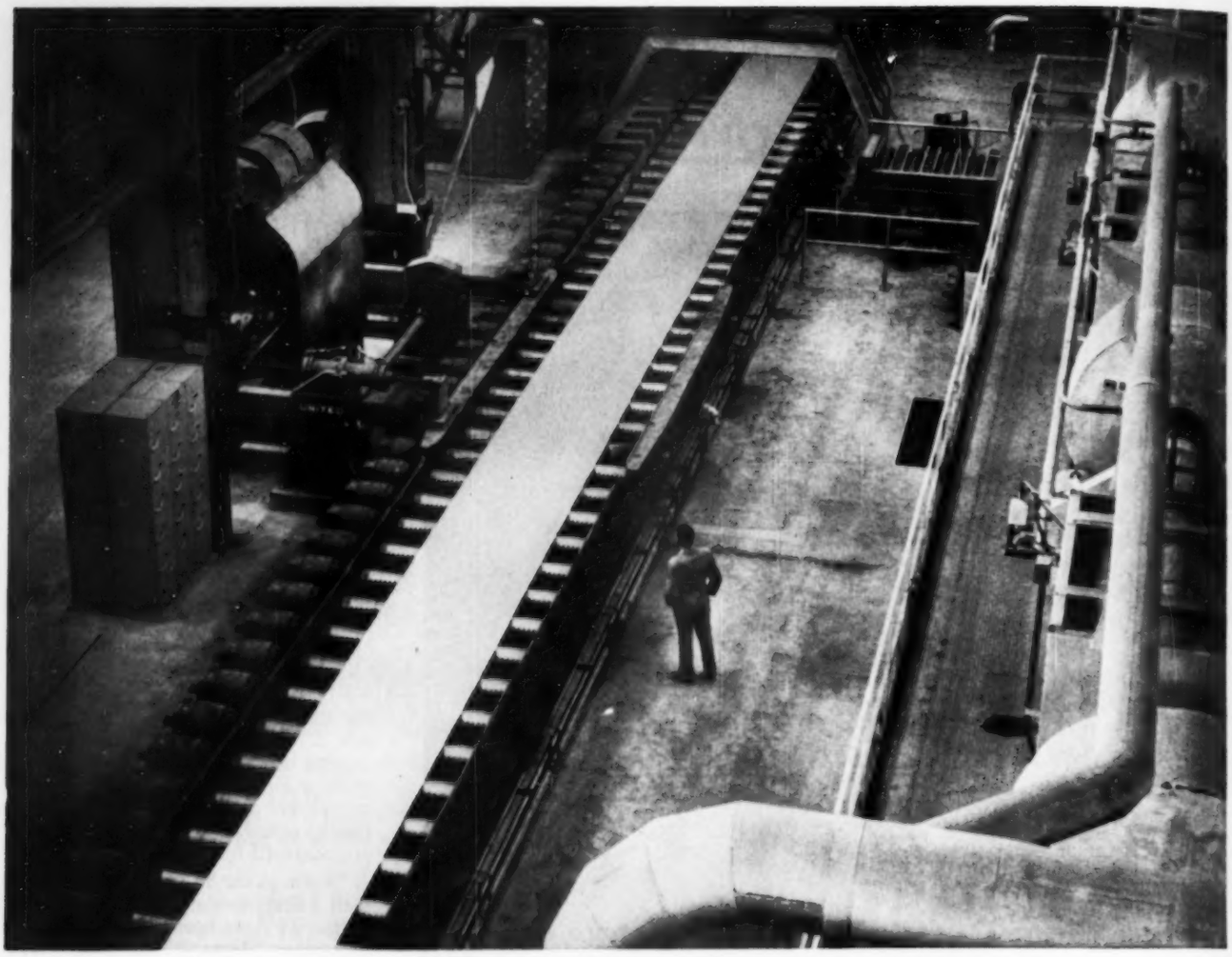
• • • •

Whether your newspaper is a multi-edition daily or small weekly, TTS can materially cut your composing room costs. For information address a post card to: Teletypesetter Corp., Dept. PE-10, 2752 North Clybourn Avenue, Chicago 14, Ill.

TELETYPESETTER

*Made with MAGNESIUM for better reproduction*

DOW



*THIS NEW DOW ROLLING MILL is now producing magnesium photoengraving sheet in large quantity*

# PRODUCTION ROLLING FOR MAGNESIUM PLATES!

***Economy, light weight and reproduction quality—***
***big reasons why this superior photoengraving metal is fast***
***gaining popularity with engravers and printers alike***

Engravers like it. So do printers. That's why magnesium—a relatively new engraving metal—is now used for 25 to 30% of *all photoengraving* plates!

Economy, light weight and quality of reproduction have already been named as reasons for this extremely rapid growth. But there are several other reasons: Etchability and machinability are faster and easier with magnesium. Good dimensional stability ensures register. Then there's outstanding wearability—for direct printing, as well as molding of stereotype mats and electrotypes.

*Getting back to light weight*, magnesium is four times lighter than zinc . . . five times lighter than copper! Naturally, it's much easier to handle.

*Consider the many benefits* of magnesium photoengraving plate—for all concerned. Then consider its moderate price and ready availability. Chances are good you'll want to investigate this superior engraving metal for your own operation. Contact your local supplier of engraving metals or THE DOW CHEMICAL COMPANY, Magnesium Sales Department MA 383U-2, Midland, Michigan.

*you can depend on DOW MAGNESIUM* DOW

HURLETRON

**is the only automatic color register control now in use on newspaper presses in the United States**

HURLETRON

**is the only automatic color register control specifically designed for ROP color**

HURLETRON

**is the most economical to install, operate and maintain**

HURLETRON

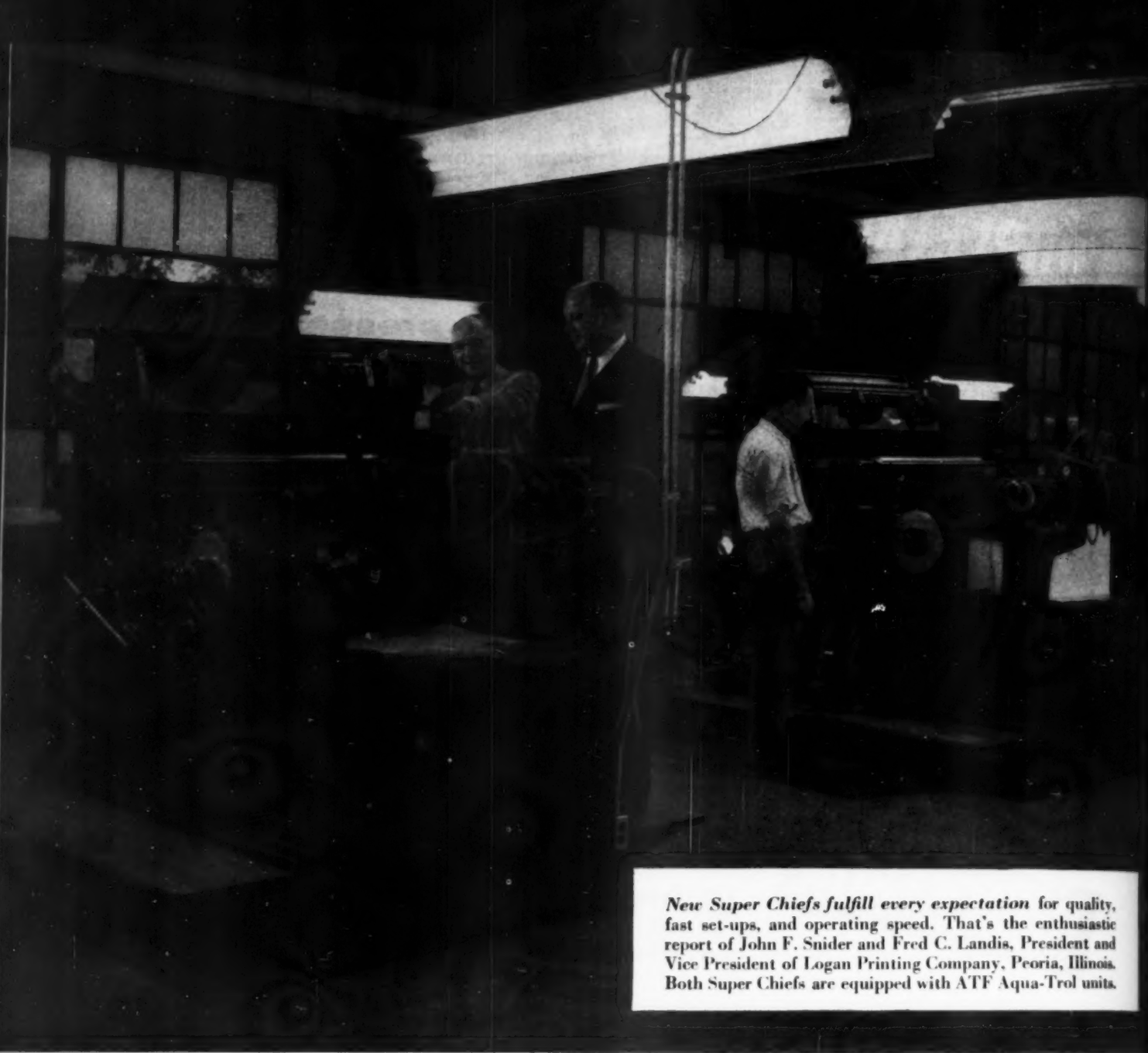
AUTOMATIC
REGISTER CONTROL FOR

**R. O. P.**
**COLOR**

**ELECTRIC EYE EQUIPMENT COMPANY**

1930 East Fairchild Street • Danville, Illinois

Manufacturers of: Hurletron R.O.P. Color Registration Controls; Automatic Controls of Caliper and Weight on Paper and Board; Center Line and Side Web Guide Controls; Cut-Off and Back-Up Controls; Slitter Controls; Moisture Controls.



*New Super Chiefs fulfill every expectation* for quality, fast set-ups, and operating speed. That's the enthusiastic report of John F. Snider and Fred C. Landis, President and Vice President of Logan Printing Company, Peoria, Illinois. Both Super Chiefs are equipped with ATF Aqua-Trol units.

# profits can be made and lost while presses are standing still

Stands to reason. Faster set-ups cut costly non-productive hours, boost daily output, increase profits all along the line.

That's why it's of dollars-and-cents concern to you that the ATF Super Chief has the jump on any other press in its class when it comes to fast set-up and whirlwind changeovers. *It will pay you to find out why.*

And that's only one of the many superiorities that makes the ATF Super Chief the most productive in its class... the easiest and most economical to run... the most versatile... and the offset press whose quality work is already the talk of the industry. *It will pay you to check on its superior operating features.*

A long list of leading printers will testify to the ATF Super Chief's profit-producing features—fast set-up time, 2800 to 7000 iph, numerous automatic operations and beautiful work.

*It will pay you to check with your ATF representative.* He'll be glad to discuss the Super Chief's earning advantages with you. Or write direct for further information.

ATF

**AMERICAN TYPE FOUNDERS**

200 Elmora Avenue, Elizabeth, N. J.

**better, more profitable printing... from the most complete line of equipment**

# *If forms could cry "Uncle"...*

. . . what an ear-ringing din those hard-working business forms of yours would set up. Punishment? Name any kind of business printing that has to absorb more.

Put your forms on a bond that holds up when it's handled and carried, crumbled and smoothed, filed and re-filed. MAXWELL BOND. MAXWELL is made well. It takes pen, pencil, typewriter *and* eraser.

MAXWELL is priced right, too, and our watermark shows we're proud of it. Try it. It's a fine bond.

Send your letterhead if you'd like to see samples of Maxwell Bond's six colors, four weights and six finishes.

# Maxwell Bond

*America's Favorite Low-Cost Bond*

HOWARD PAPER MILLS, INC. • MAXWELL PAPER COMPANY DIVISION • FRANKLIN, OHIO

Mrs. William E. Bowman
7737 North Eastlake Terrace
Chicago 26, Illinois

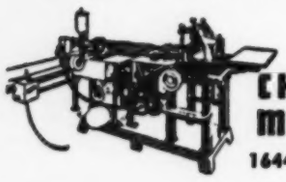
# MASS MAIL

## The CHESHIRE Way*

● Automatically attach addressed labels at operating speeds up to 18,000 per hour. Faster, more accurate than any other method, hand or machine. Opens mail room bottlenecks, maintains schedules, reduces subscription complaints.

100,000,000 mailings per month on Cheshire machines. Earlier models still operating after 28 years' constant use.

* An addition to, not a replacement of, your present addressing system. Apply roll strip or continuous pack form labels.



CHESHIRE MAILING MACHINES, INC.
1644 N. Honore St., Chicago 22, Ill.



ACME ONE BITE ETCHING IS BETTER

The Acme One-Bite Etcher etches halftones to a depth of .006", line and combination to .040". Side walls are automatically coated with a resist to prevent undercutting.

ACME ONE BITE ETCHING IS FASTER

The Acme One-Bite Etcher etches halftones in just 5 minutes; line and combination—from negative to finished plate — in 15-20 minutes.

ACME ONE BITE ETCHING IS CHEAPER

The Acme One-Bite Etcher eliminates costly, time-consuming 4-way powdering, heating and cooling. The plate is made in one operation. Routing is eliminated or greatly minimized.

IT WORKS LIKE THIS

The negative is printed on an Acme Z-M (Zinc-coated magnesium) plate in the conventional manner. Unexposed zinc is removed in two minutes with dilute nitric acid. The prepared plate is then fastened to the lid of the Acme One-Bite Etcher. Five to twenty minutes later the completed plate is removed ready to be cleaned, dried and used. That's all there is to it.

ACME TELECTRONIX
DIVISION OF NEA SERVICE, INC.
1200 West Third Street Cleveland 13, Ohio
The plate for this ad was produced on the Acme One-Bite Etcher.


## Equipment & Supplies

(Continued from Page 6)

ing transformers to maintain light intensity and color temperature regardless of line voltage fluctuations. For further details, please mention PEE No. 242 in your request.

### Speed-Flex Offset Job Press

A web offset job press which can be supplied to perform such operations as longitudinal and crosswise perforating, scoring, punching, numbering, imprinting, attaching carbon, sheeting, rewinding, folding and continuous flat pack printing has been introduced by Orville Dutro & Son, Inc. To be known as the Speed-Flex offset press, the unit, states the sponsor, has been designed to perform printing and other fabricating operations in one continuous operation. Max. web speed is 350 ft. per min., it is claimed.

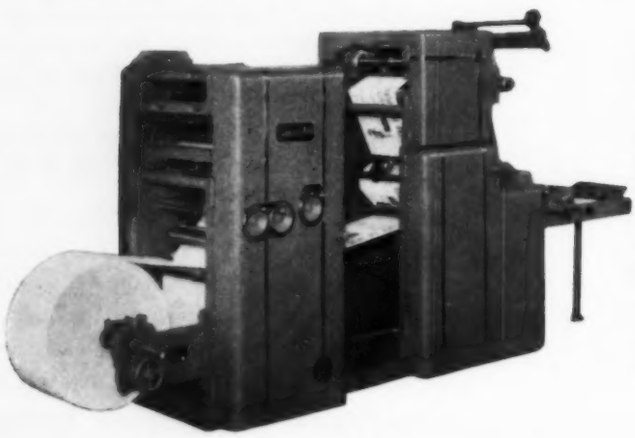
According to Dutro, production possibilities of the press include: Print one color offset, rubber plate imprint, number with two shaft numbering equipment, perforate both ways, adhere a carbon web to the face of the printed web, and 17 in. cutoff length at a speed of 15,000 per hr. or 8½ in. cutoff length at 18,000 per hr. Web width range is 5 in. to 13 in. The machine can be supplied with one or more offset units arranged to print on either one or both sides of the web.

Features of the press include a tilting arrangement for ink and water distribution providing convenient access to plate cylinder and water rollers. Dutro states this feature provides 50% accessibility to the plate cylinder during makeready operations.

When the stop button is depressed to stop the press from operating, the ink rollers back off ¼ in., the water rollers back off ¼ in., and the impression lifts. Plate cylinder gap is ¼ in.; blanket cylinder gap, 5/16 in. Cylinders have provisions for preregistration. The press is powered by a Reliance V. S. drive. Ink distribution is preformed by three form rollers, three vibrators and 11 distributors (which include three in subdistribution).

Other specifications are: Max. printing area, 13 in. by 16⅝ in.; cylinder circumference, 17 in.; plate thickness, 0.008 in. to 0.012 in. (unless otherwise specified); weight, 4800 lbs.; floor space, 2 ft., 9 in. by 12 ft., 6 in.

For further details, please mention PEE No. 244 in your request.



**Speeds up to 350 ft. per min. are claimed for the Speed-Flex business forms web offset press announced by Orville Dutro & Son. Press is designed for performing several fabricating operations along with printing, and can be arranged with any number of printing units.**

### Darkroom Air Conditioner

The Miller-Trojan Co. recently announced its Dustroyer unit which provides continuous circulation of fresh air inside a darkroom. The 275 cu. ft. per min. capacity unit is used to pump air through a filter and pressurize the interior of the darkroom so that stale air is expelled and dust particles are repelled. The all metal unit fits between the joists, anywhere in the wall. The unit does not admit

(*Continued on Page* 20)

# Almost Everybody

*hot molding* **R.O.P.** *color mats uses*

**DIRECTOMAT**

Atlanta Journal-Constitution
Atlantic City Press
Baltimore News-Post
Beaumont Enterprise & Journal
Billings Gazette
Birmingham News
Bridgeport Herald
Buffalo Courier-Express
Calgary Albertan
Chicago American
Chicago Tribune

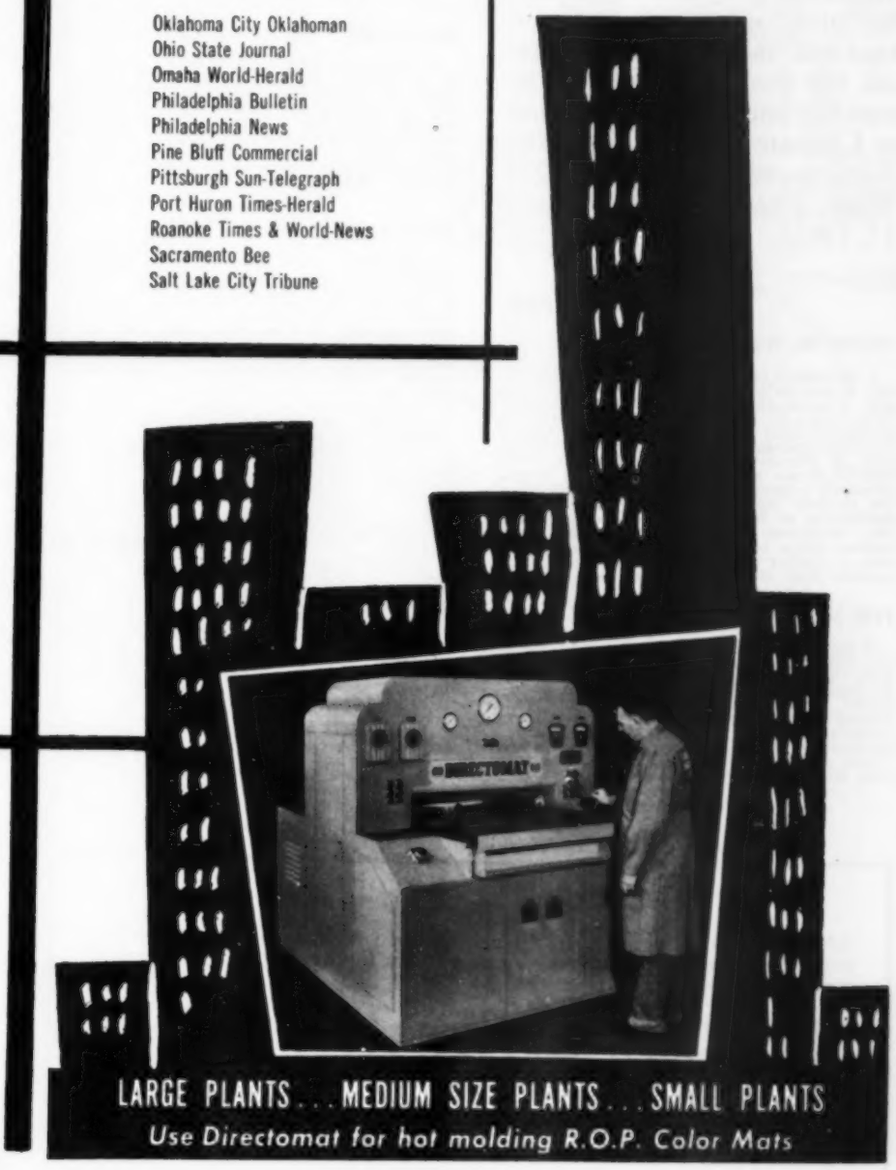
Cleveland Press
Columbus Dispatch
Dayton News
Daytona Beach News & Journal
Denver Post
Des Moines Register & Tribune
Detroit News
Dixon Telegraph
Florida Times-Union
Fort Worth Star-Telegram

Green Bay Press-Gazette
Grand Rapids Herald
Honolulu Star-Bulletin
Houston Chronicle
Houston Post
Indianapolis Star & News
Kansas City Star & Times
Los Angeles Examiner
Los Angeles Times & Mirror
Lima News

London Free Press
Louisville Courier-Journal
Miami Herald
Miami News
Milwaukee Journal
Milwaukee Sentinel
Minneapolis Star & Tribune
Nashville Banner & Tennessean
New Orleans Times-Picayune
New York News
New York Journal-American

Oklahoma City Oklahoman
Ohio State Journal
Omaha World-Herald
Philadelphia Bulletin
Philadelphia News
Pine Bluff Commercial
Pittsburgh Sun-Telegraph
Port Huron Times-Herald
Roanoke Times & World-News
Sacramento Bee
Salt Lake City Tribune

San Francisco Chronicle
San Francisco Examiner
Seattle Post-Intelligencer
Spokane Chronicle & Spokesman Review
St. Louis Globe-Democrat
Toledo Blade & Times
Toronto Star
Tulsa World & Tribune
Wall Street Journal
Washington Post & Times Herald
Youngstown Vindicator




LARGE PLANTS . . . MEDIUM SIZE PLANTS . . . SMALL PLANTS

*Use Directomat for hot molding R.O.P. Color Mats*

● *1000-Ton Directomat Illustrated*

LAKE ERIE HYDRAULIC PRESSES

**LAKE ERIE ENGINEERING CORPORATION**

*568 Woodward Avenue, Buffalo 17, New York*

**Manufacturers of the Most Complete Line of Hydraulic Presses for All Industry.**

LAKE ERIE® DIRECTOMAT®

## Graphic Arts Equipment and Supplies

# Literature for the Asking

*Keep Yourself Informed.* The folders and bulletins listed below all pertain to modern equipment, supplies, processes and/or methods. These have been prepared especially for plant managers, superintendents and foremen. Please ask for the pieces selected by number and send your request to Literature Dept., *Printing Equipment Engineer,* 1276 West Third St., Cleveland 13, Ohio.

### Composing Room

#### FOTOSETTER PLUS MAGNESIUM

A broadside produced by Intertype Corporation is entitled *Here's how Intertype Fotosetter plus Magnesium Fit into Modern Newspaper Production.* All type in the broadside was set photographically on an Intertype Fotosetter linecomposing machine. The type on film, as well as negatives of the illustrations, were used to make magnesium plates. The broadside was printed by letterpress directly from the original magnesium plates. Broadside is descriptive of how Perry Newspapers, Ocala, Fla., combined the type on film with magnesium plates to print the *All Florida Magazine,* a Sunday supplement. For a copy, please mention PEE No. 249L in your request.

#### TYPE SPECIMEN SHEET

A specimen sheet of the complete alphabet of two new display sizes of Times Roman and Bold, 18 pt. and 24 pt., is available from Mergenthaler Linotype Co. The sheet is designed to be inserted in Linotype's Times Roman specimen booklet, and completes the range of sizes, 5½ pt. to 24 pt. The face was designed by Stanley Morison for use in the *Times* of London. For a copy, please mention PEE No. 218L in your request.

### Platemaking

#### PLATES FOR FOLDING CARTONS

Oshkosh Engraving Co. has published a two-page, 8½ in. by 11 in. bulletin on magnesium pattern plates for the folding carton industry. Advantages of magnesium plates are recounted. For a copy please mention PEE No. 250L in your request.

#### ZINC ALLOY

A small size, four page bulletin, descriptive of its Micro-Metal zinc alloy, has been published by Rolled Plate Metal Co. Micro-Metal can be used for powderless and conventional etching. It is fine grained, non-buckling and is said to have dimensional stability. Included in the bulletin is a description of how Micro-Metal is made. For a copy, please mention PEE No. 220L in your request.

#### PLATEMAKERS GUIDE

*Platemakers Guide,* a reference booklet in which is presented aspects of preparing presensitized photo offset plates, is being offered by Minnesota Mining and Mfg. Co. In the 31 page booklet, 110 subjects and 40 illustrations are included. A contrast-comparison guide which shows the negative contrast required for smooth surface plates is contained in the booklet. Other subjects are on proper stripping, negative consideration, plate handling, chemical handling and trouble shooting. For a copy, please mention PEE No. 176L in your request.

### Pressroom

#### NUMBERING ON THE DUAL-LITH

A technical bulletin entitled *Numbering on the Davidson Dual-Lith* was published by Davidson Corporation to provide detailed information and instructions for performing a variety of numbering operations on the Dual-Lith. In the eight page bulletin, a list of 36 suggested applications for numbering jobs is included. Instructions are given for horizontal, vertical and combination numbering operations and illustrations are included. Various types of numbering attachments for different Davidson Dual-Lith models are also described. For a copy, please mention PEE No. 244L in your request.

#### VERTICAL PRESS

The Miehle Printing Press & Mfg. Co. recently released a descriptive booklet on the Miehle V-50 Vertical Press entitled, *The Basic Press for Profitable Printing.* The booklet is descriptive of the operating principle, features and recent improvements of the press. Also covered are the many types of work the V-50 will handle, discussing it under four categories: Advertising printing, commercial work, process color work and specialty printing. For a copy, please mention PEE No. 247L in your request.

#### DRY OFFSET POWDER UNITS

American Type Founders has prepared an illustrated booklet on Flo-Mix Dry Powder equipment for offset problems. The eight page booklet is for the printer with such problems as sticking, slip-sheeting, slow drying inks, use of gloss, varnish and metallic inks. Flo-Mix Dry Powder units are tailor made for each press including carriage delivery presses, chain delivery presses, or smaller presses where stepped-up speeds are desired. For a copy, please mention PEE No. 251L in your request.

#### SYNTHETIC RUBBER ROLLERS

Ace Rocket rollers, manufactured by Ideal Roller & Mfg. Co., are described in a two color folder. The rollers are made of synthetic rubber which, it is said, does not absorb moisture, does not soften in hot weather and does not harden in cold weather. Also included in the folder is a list of Ideal sales offices and selling agents. For a copy, please mention PEE No. 252L in your request.

#### BRONZING MACHINE

The Dreissig Kombi 10 V Bronzing Machine, available through Henry P. Korn, is described in a four page bulletin. The machine is intended for use in tandem with a printing press. Max. bronzing speed is 16,200 ft. per hr. The unit is equipped with four burnishers and six dusting bands. Pile delivery depth is 26 in. The Bronzing Machine is illustrated and a diagram is used to show operation of the machine. The bulletin is printed on a Victoria-Front Press in tandem with a Dreissig Bronzing Machine. Also included in the bulletin is a table of specifications. For a copy, please mention PEE No. 253L in your request.

#### INK CONDITIONER AND VARNISH

Four bulletins issued by Central Compounding Co. are descriptive of the company's ink conditioners and overprint varnish. Quickset ink conditioner is recommended by Central for offset and letterpress work and turn printing without danger of crystallization, sticking and heating. For preventing too rapid drying of gloss inks and overprint varnish on the press, 33 and 0-33 ink conditioners are suggested by Central. Glazcote ink conditioner, also for letterpress and offset use, produces a tough, scuff-resistant finish, claims the company. Another scuff-proof product is 20/20 overprint varnish which Central says is non-yellowing, non-crystallizing. Please mention PEE No. 241 when requesting these bulletins.

#### COLOR SEPARATORS

Dayco Color Separators for newspaper printing units are illustrated and described in a four page brochure released by The Dayton Rubber Co. Dayco Separators are designed to fit most newspaper presses and provide separation of the colors using all types of inks. Installation information and features of the separators are included in the brochure. For a copy, please mention PEE No. 182L in your request.

#### CUTTER-CREASER EQUIPMENT

A description of roll fed cutter-creaser equipment, including detailed operating instructions and descriptions of all components, is included in a 44 page book prepared by Champlain Company. In the booklet is included a discussion of the history, features and types

*(Continued on page 76)*

### Literature Request Coupon

After you have selected the literature described in these pages which you would like to have sent to you, please jot down the identification numbers on this coupon and mail to

**PRINTING EQUIPMENT *Engineer***
**1276 West Third St., Cleveland 13, Ohio**

Literature Number (s) _____

_____

Your Name and Title _____

Company Name _____

Street Address _____

City _____ Zone _____ State _____

10-56

## Four-compartment ink pump for color flexibility

Now you can print in color, full black or combinations of black and color without depending on *out-moded* newspaper ink fountains, ductor rollers, fountain rollers and other corresponding mechanisms. The Hoe four-compartment ink pump – an integral element of Hoe's exclusive inking system for color printing, makes this possible. The Hoe inking system consists of an ink pump supplying ink in accurately controllable quantities to an ink rail which places the ink on the ink drum.

All ink system controls and color pump filling points are at convenient working heights at press room level. Adjustments are simple and easily made by hand. Operation is simple, too. Hoe's exclusive pump system is cleaner and more accurate.

The great working flexibility of this pump system – its efficient operation – is typical of the advanced engineering Hoe places at your disposal. It will pay you to get in touch with Hoe.

R. HOE & CO., INC.

**910 East 138th Street, New York 54, N. Y.**
BRANCHES: BOSTON • CHICAGO • SAN FRANCISCO

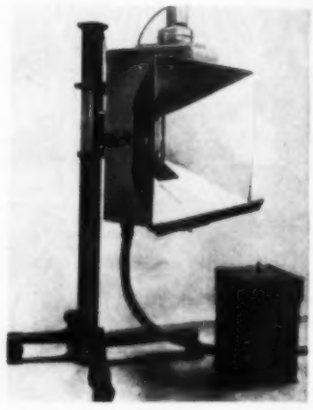
## Equipment & Supplies

(Continued from Page 16)

light and is constructed with louvered grills which can be turned to direct incoming air in four different directions. The unit is plugged into a 110 v., 60 cy. outlet and is operated by a toggle switch. For further details, please mention PEE No. 237 in your request.

### Camera Arc Lamp

The automatically motor driven Grafarc Challenger camera arc lamp was recently announced by The Strong Electric Corp. When the lamp is turned on the motor advances the carbons, strikes the arc, backs up the carbons to establish the correct arc gap length, and steadily feeds the carbons at a rate which maintains the proper gap throughout the burning of the trim. The motor feed is said to maintain constant current, color temperatures of the light remaining constant at 6800 deg. Kelvin. The Challenger is said to be adaptable to exposures of 5 sec. duration. It is equipped with a reflector for use with work of any size. Indicating meter is used in connection with the tap-changing switch which permits compensating for line voltage variables. Two receptacles in the transformer housing permit dual lamp operation from one transformer. Two models are available. One burns Photo 88 copper-coated carbons at 75 amp., 25 v. at the arc, and the other burns Photo 118 copper-coated carbons at 110 amp., 28 v. at the



arc. The trims on both are said to burn up to 1¾ hrs. For further details, please mention PEE No. 236 in your request.

### Pressure Sensitive Tape

A transparent pressure sensitive tape for business and industrial use was announced by the General Tape Corp. A polyethylene-surfaced cellulosic backing is utilized. Temporarily the tape has been designated as No. 66. It is now available only in ½ in. wide rolls, 2592 in. length. The adhesive of the tape, it is stated, is of a long aging, pressure sensitive, clear resinous material. Top surface of the tape is said to be resistant to acids and alkalis, and is impermeable to greases, oils, and powders. It is also

said to possess dimensional stability with flexibility at low temperatures and is not subject to brittleness and drying out. For further details, please mention PEE No. 243 in your request.

### Aluminum Alloy Logotype Matrices

A new aluminum alloy is being used for producing logotype, crest and colophon matrices by Stephen Austin and Sons, Ltd., oriental and general printers, Caxton Hill, Ware Road, Hertford, Herts, England. Typecasting matrices to suit any type of casting machine to the customer's own design are furnished. The aluminum alloy material is said to be particularly useful in applications where high pump pressures and metal temperatures bring out fine line detail in the matrix pattern design. Stephen Austin and Sons, it is

(*Continued on Page* 36)


DO THE WORK OF HOURS *in Minutes!*

**SLASH YOUR PRINTING COSTS WITH THE**

*Rouse*

**POWER MITERER**

If you need miters in either small or large quantities, no other machine nor method can turn out anywhere near as many perfect joining miters so quickly from strip material. That's how the Rouse Power Miterer can slash your printing costs by doing work in minutes that now takes you hours.

A Rouse Power Miterer won't cost you one cent! Printers the world over say that money paid for a Rouse Power Miterer quickly comes back through tremendous savings in expensive time. After getting your money back, you'll start collecting daily dividends from permanently lower operating costs.

**FROM THE SMALLEST JOB SHOP UP TO THE LARGEST PLANT, ONLY ROUSE MAKES A POWER MITERER FOR EVERY TYPE OF USE.**

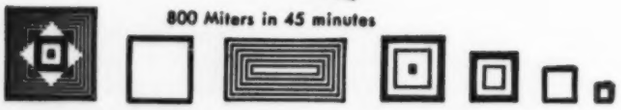
You may buy any Rouse Power Miterer as a bench model or with any other equipment you wish.

Virtually every printing plant in the world uses one or more Rouse products.

**NEW ROUSE CATALOG**

*Write for your copy TODAY!*

800 Miters in 45 minutes



**H. B. ROUSE & COMPANY**

2714 NO. WAYNE AVE., CHICAGO 14, ILLINOIS

ROUSE PRODUCTS — THE STANDARD OF THE WORLD FOR 50 YEARS

MITERING MACHINES
LEAD and RULE CUTTERS
COMPOSING STICKS
TYPE GAUGES
SLUG CUTTERS
BAND SAWS

# Success Story *Behind* A Success Story

**New filter tip Marlboro in unique "Flip-Top" box hit a big-volume market ...and Champlain's Rotogravure with Inline Cutter-Creaser is part of the story!**

Fine product, fine package and fine promotion are the prominent factors in Marlboro's brilliant rise in popularity. And vital to the economical production of that package is the Champlain inline equipment.

Printing and die-cutting and removing waste in one quick pass—all automatically—the Champlain inline equipment swiftly produces packages from a continuous web with unvarying precision!

You can have the same high-speed, economical production... the same success... as these carton producers. Ask for your copy of the new comprehensive book on Cutter-Creaser Equipment. It contains all the facts you'll want to know. Champlain Company, Inc., 88 Llewellyn Ave., Bloomfield, N. J. Chicago Office: 520 N. Michigan Ave., Chicago 11, Ill. ⊕ 3640

**Here's what the boxmakers themselves say:**

**Mr. Lewis G. Chewning, President, Virginia Folding Box Company, the company first to develop and utilize the process of producing the Marlboro box on inline gravure equipment—"We are confident that Champlain equipment provides the most satisfactory and economical way of producing this box in volume."**

**Mr. J. Gibson McIlvain, President, Downington Paper Box Company —"In my opinion, no other equipment presently available equals this equipment for overall economy and quality in the production of this carton."**

**Look at these features that mean high-quality, low-cost production:**

- **Heavy-duty construction... cutting-load capacity up to 250 tons.**
- **When used inline, up to 2400 cartons printed (any number of colors, 2 sides), cut, creased, stripped and delivered *per minute*.**
- **Micro-tension control for unfailing print-to-cut accurate register.**
- **Variable delivery speed and diversity of control.**
- **Platen press quality at cylinder press speeds.**
- **Positive die lock-up.**
- **New type chase permitting make-ready in back of cutting or score rule.**

Champlain

*Champlain manufactures a complete line of rotogravure, flexography, rotary letterpress and allied equipment for packaging and specialty printing.*

# 7 Clevelands...

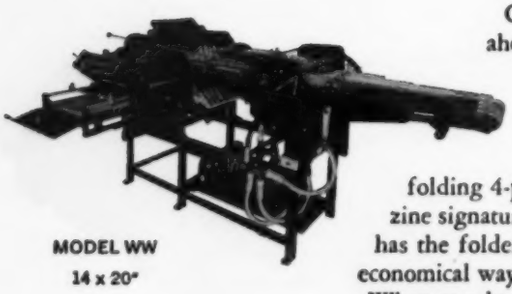
## *All Years Ahead in Utility, Speed and Earning Capacity . . . Proved by Performance, NOT just idle claims!*

Every Cleveland folder, large or small, has established a world-wide reputation for dependable service. Over the years, research and development have gone ahead. The top quality of Cleveland Folders *has never varied.*

There's a Cleveland for every folding job, ready to prove its versatile superiority. Whether your requirements call for folding 4-page circulars, inserts, greeting cards, magazine signatures... numberless special jobs... Cleveland has the folder needed to handle it the best and most economical way.

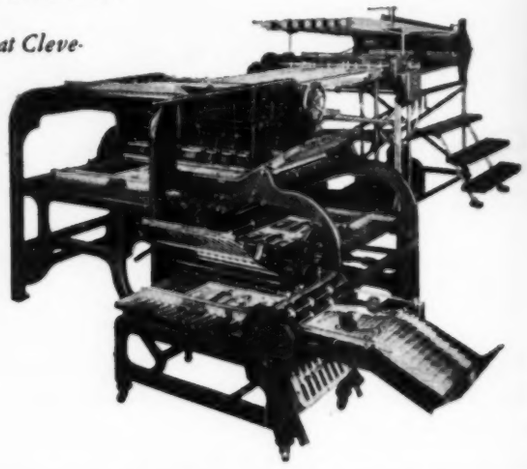
When you buy a Cleveland folder you've made an investment in profitable production. Don't be satisfied with less.

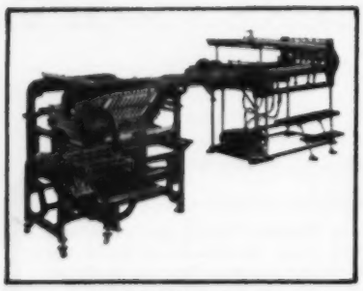
*Send for complete information on the 7 great Cleveland Folders.*



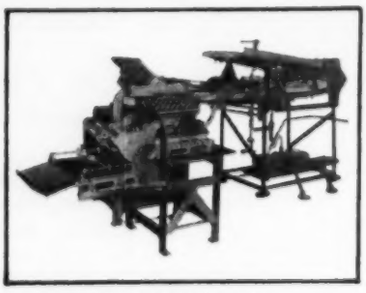
MODEL WW
14 x 20"

MODEL KK
44 x 58"

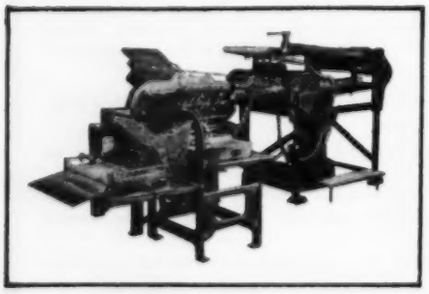




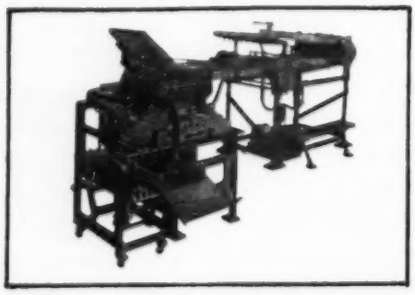
MODEL MM 28 x 58"



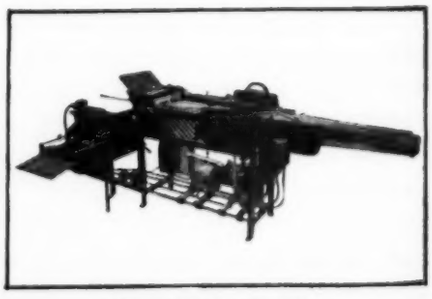
MODEL OO 22 x 28"



MODEL OS 19 x 25"



MODEL MS 25 x 38"



MODEL AT 17½ x 22½"

ILLUSTRATED CIRCULARS ARE AVAILABLE FOR ANY OF THE ABOVE MACHINES

**DEXTER FOLDER COMPANY**

General Sales Office

330 West 42nd Street New York 36, N. Y.

3807

# When disaster strikes...

## Your Scan-A-Graver is Replaced Immediately at No Cost to You

One of the many advantages of the Fairchild lease agreement is the protection it gives you against the loss of your Scan-A-Graver due to "acts of God." Here's the way the lease agreement reads in part — "... you are relieved of the responsibility for loss or damage caused by ... lightning, tornado and wind storm, water damage ... collapse of buildings...."

### Whenever you need help ... Fairchild Representatives are on the job

Loss of equipment and the suspension of news coverage resulting from a sudden disaster is a nightmare no newspaperman likes to face. But when it does happen, Fairchild is quick to respond to put the Scan-A-Graver back in operation. Fairchild Customer Engineers have built an enviable reputation for resourcefulness in overcoming obstacles of weather and time to replace a damaged machine ... or a part ... and to help whenever help is needed. This is only one phase of Fairchild's varied services dedicated to keeping Scan-A-Graver customers in operation regardless of circumstances.

**RECENT SCAN-A-GRAVER REPLACEMENTS BECAUSE OF DISASTER DAMAGE**

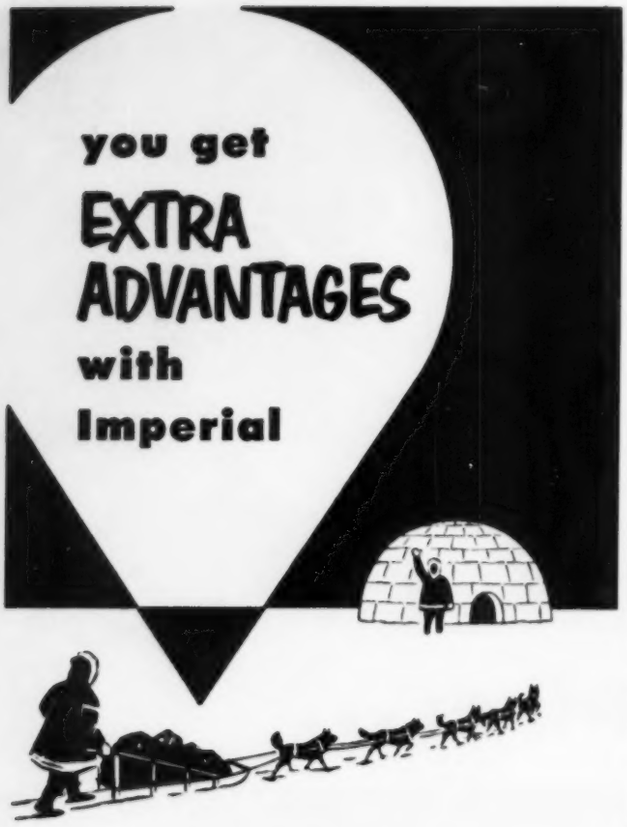
| | |
|---|---|
| News | Naugatuck, Conn. |
| Courier | Wareham, Mass. |
| Rumford Falls Times | Rumford, Maine |
| Journal | Elizabeth City, N. C. |
| News Chief | Winterhaven, Fla. |
| Tribune | Mesa, Ariz. |
| Press | Ypsilanti, Mich. |

• A Fairchild representative will be glad to explain the many advantages of the Scan-A-Graver Lease Plan and Fairchild Customer Engineering Services. Write Fairchild Graphic Equipment, Inc., 88-06 Van Wyck Expressway, Jamaica 1, N. Y., Dept. 100-35 E

FAIRCHILD

**SCAN-A-GRAVER**

Electronic Engraving Machines



you get
EXTRA
ADVANTAGES
with
Imperial

frequent, regular
service calls no matter
where you are

Years ago Imperial originated the first type metal servicing plan whereby customer's type metal would be serviced regularly and its ingredients kept continuously in working balance. Today, the successful operation of Imperial's servicing plan still calls for frequent, regular visits by trained type metal service men. These field men call to thoroughly check your metal handling so that no loss of production can be traced to your type metal.

Dependable, trained plant visitation service is another of the "extra advantages" in Imperializing your plant.

IMPERIAL
TYPE METAL COMPANY
Imperial
PHILADELPHIA 34 • NEW YORK 7 • CHICAGO 50



the world is so full of
a number of things . . .

that are numbered better
with a WETTER
ROTARY NUMBERING MACHINE!

Right-Angle Rotary Machine

a WETTER Rotary gives you
plenty of SAS —always!

This curved-faced rotary machine is built to imprint numbers at right angles to the axis of the impression cylinder. Note barrel-shape of number wheels. Cam-actuated—heavy duty construction assures accurate, clean numbers even at highest press speeds. Available in Roman or Gothic style figures.

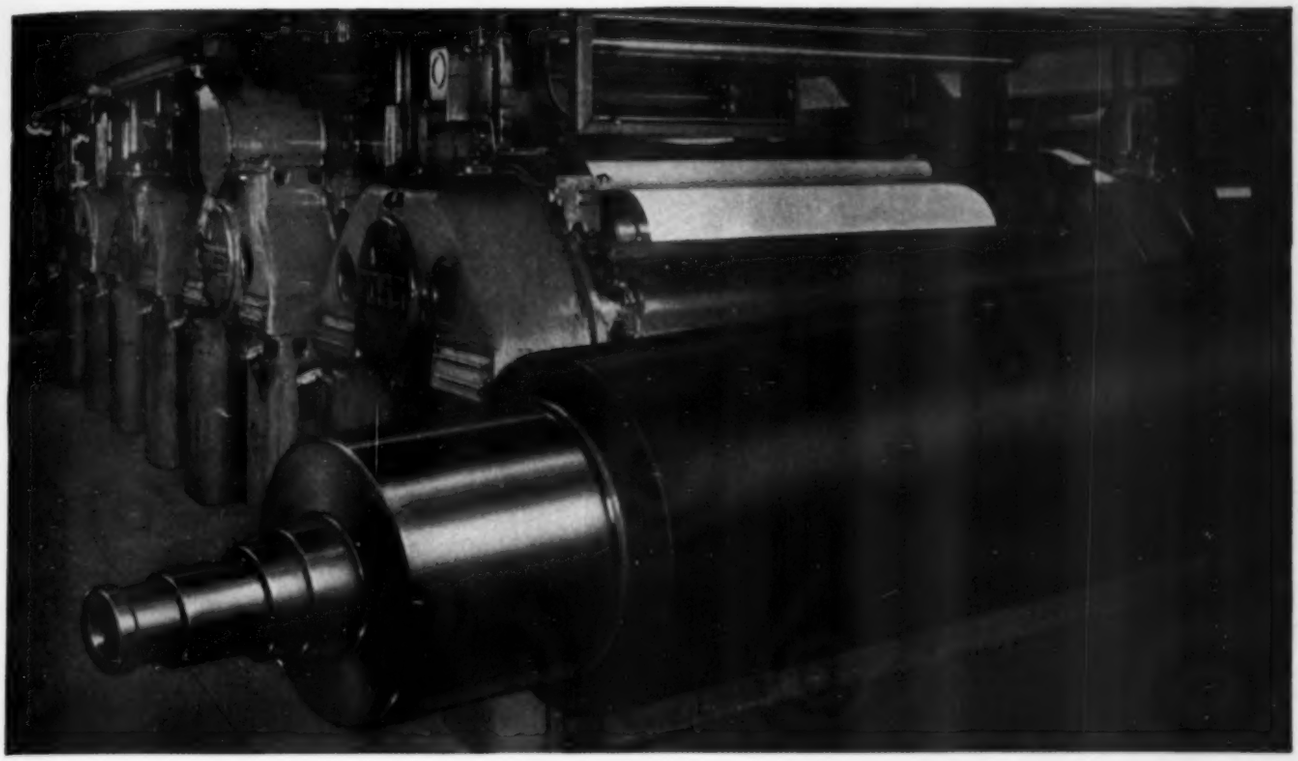
*SPEED—keeps pace with the fastest rotaries.
*ACCURACY—in numbering sequences—in alignment of figures.
*SHARPNESS—in impressions.
Write for free descriptive folder today.

1641

WETTER NUMBERING MACHINE CO.
ATLANTIC AVENUE & LOGAN STREET · BROOKLYN 8, N.Y.
ONLY UNION MADE NUMBERING MACHINE IN U.S.A.

# NEW COMPOUNDS RESIST PITTING, COLUMN SCORING

## *in* DAYCO GOLD SEAL* *Newspaper Rollers*



Reduce the cost of roller maintenance with all-new, more resilient Dayco Gold Seal Newspaper Rollers. Dayco Rollers resist the pitting and column scoring which necessitate frequent, costly roller regrinding because they're made of entirely new synthetic rubber compounds possessing really amazing resilience.

This long-lasting ability to give under pressure, then return to their original shape, plus excellent tensile strength, means Dayco Rollers keep their smooth surface longer. Result: maintenance and regrinding costs go way *down*.

To assure you perfect inking of halftones, solids and type through every run, the newly developed compounds in Dayco Rollers keep their accurately rounded, ink receptive surface on the hottest, fastest press runs.

In addition, special fire resistance built right into Dayco Rollers helps increase press room safety because they will not support combustion.

Order a set of the all-new Dayco Gold Seal Newspaper Rollers. Comparison will prove their many money-saving advantages. Ask your Dayco Representative about the phenomenal Dayco Color Separator . . . lets you run countless ROP color combinations . . . confines misting. Or write direct to The Dayton Rubber Company, Dayco Division, Dayton 1, Ohio.

**Dayco Rollers . . . for Offset, Letterpress, Gravure, Analin, Coating, Graining, Steel Mills. Dayco Offset Blankets, Dayco Fountain Dividers, Dayco Color Separators.**

© D. R. 1956 *T. M.

**Dayton Rubber** 51 YEARS OF PROGRESS

***West Coast Distributor, Tillicum Rubber Co., Lacey, Washington***

## *IPI experts analyze magnified cross-sections of paper stock to study ink penetration . . . and give you better quality printing*

To grasp the full story of how printing ink behaves on paper, you must "read" the edge of a printed page enlarged many times by a microscope.

The preparation of such a specimen for study is one of the challenges to a microscopist.

The first successful method for the preparation of intact sections of paper and board stock was developed at Interchemical research laboratories. It involves a special technique of embedding the stock which supports the delicate structure of the fibers in sections as thin as 5 microns. After the stock has been embedded in mounting material such as vegetable gum, it is placed in the jaws of a microtome, a sort of scientific meat slicer. This machine provides specimens that are tissue thin for study under a microscope.

The artist's sketch, at left, taken from actual photomicrographs, represents an extreme case of roughness of a magnified cross section of printing ink on coated stock. The ink film is seen as a jagged red line extending along the rough, irregular surface of the coating. Next comes the base stock and at the far right is the coating on the back of the paper, displaying peaks and depressions on the printing surface.

IPI technicians use the microtome to examine the binding characteristics of IPI printing inks . . . and to determine the depth of ink penetration of the fibres or the coatings.

This further example of IPI research which leads to quality control techniques means higher quality printing inks for you—and better quality printing for your customers.

## *IPI service at work for you*

Printing plants of all sizes are invited to use IPI's complete ink service facilities in printing centers from coast to coast. Each IPI service station and branch is staffed by local experienced ink men, well-seasoned in the special printing problems of each locality. They are always on call to help you solve any printing problems—large or small—that may arise. For know-how that comes from generations of graphic arts experience, for prompt ink service with a personal touch, contact IPI.

*IPI, IC and Vaporin are trade marks of Interchemical Corporation*

# Interchemical

CORPORATION

INTERCHEMICAL PRINTING INKS

*Printing Ink Division • 67 West 44th Street, New York 36, New York*

RELY ON IPI FOR LEADERSHIP IN INK RESEARCH

# Let's get re-acquainted...

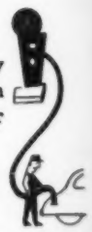
Most publishers and printers think of Huber as an important source of printing inks. And they know that their paper stocks are probably coated and filled with Huber clays. But few know that Huber makes carbon black for its own use—and is a leading supplier of carbon black to the rubber industry, as well.

Behind these operations is a closely-knit research program. In developing better carbon black, Huber controls the quality of inks it produces. In helping paper manufacturers develop better printing surfaces, J. M. Huber Corporation not only develops better clays but better inks.

**Printing Inks**—Huber's Printing Ink Division, with headquarters at Hillside, N. J., and plants in Hillside and Bayonne, N. J., McCook and East St. Louis, Ill., Boston, Mass., Borger and Baytown, Texas, and Huber, Ga., manufactures printing inks of all types. As you probably know, Huber manufactures inks for newspapers, publications, comic books, containers and commercial jobs, and distributes these inks throughout the United States and the free world.

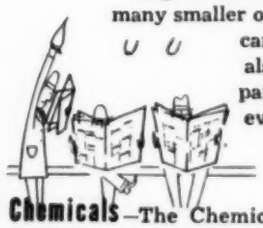
**Clay**—The Clay Division, with headquarters at Langley, S. C., and plants at Langley, Graniteville, S. C., and Huber, Ga., mines and refines kaolin clay. Its major uses are in the manufacture of paper and rubber products. In paper, filler clay helps close the surface; coating clay gives a smooth, glossy finish. In rubber, clay is used for reinforcing and stiffening such products as heels and soles, insulation, flooring and most light-colored goods. You'll also find Huber Clay in insecticides.

**Oil and Gas Division**—The Oil and Gas Division, with headquarters in Borger, Texas, operates throughout the Southwest, producing crude oil and natural gas. Some of the gas is used in our Borger carbon black plant, the remainder is sold to pipe line operators. You may be using a Huber product when you fill your car or light your gas range.



**Carbon Black**

The Carbon Black Division's headquarters are at Borger, Texas, where Huber produces both channel and furnace black. Millions of pounds of carbon black are used each year to add toughness and wear resistance to automobile tires: *all* the large rubber companies and many smaller ones use Huber carbon black. It's also used in inks, paints, and wherever black coloring is needed.



**Chemicals**—The Chemicals Division's plant at Havre de Grace, Maryland, produces Zeolexes: reinforcing white pigments for rubber; carriers for pesticides; conditioners and anti-caking agents for salt, sugar and other products; high-brightness pigment for paper.

**HUBER NEWS**, a most unusual house organ, takes you behind the scenes of all the industries described above. Write for your copy of this quarterly publication—it's yours for the asking. Address requests to: J. M. Huber Corp., 1478 Chestnut Ave., Hillside, N.J.

HUBER **J. M. HUBER CORPORATION**

INK DIVISION

Hillside and Bayonne, N.J. • Boston, Massachusetts

Chicago (McCook) and East St. Louis, Illinois

Borger and Baytown, Texas • St. Louis, Mo. • Huber, Ga.

## *Suppose you had to adjust make-ready for every sheet that went through the press*

You wouldn't get very far, would you. In fact you'd be a long, long way from that trouble-free press run every pressman hopes his make-ready will grant him.

Mead Papers help give you trouble-free press runs because they supply the most desirable characteristic in paper: *uniformity*. Every sheet of a given run of Mead paper is held to the smallest possible variation. This differential is controlled by the Beta Ray Gauge, powered by material from the atomic plant at Oak Ridge. The gauge scans the full width of the sheet and catches the slightest variation in weight.

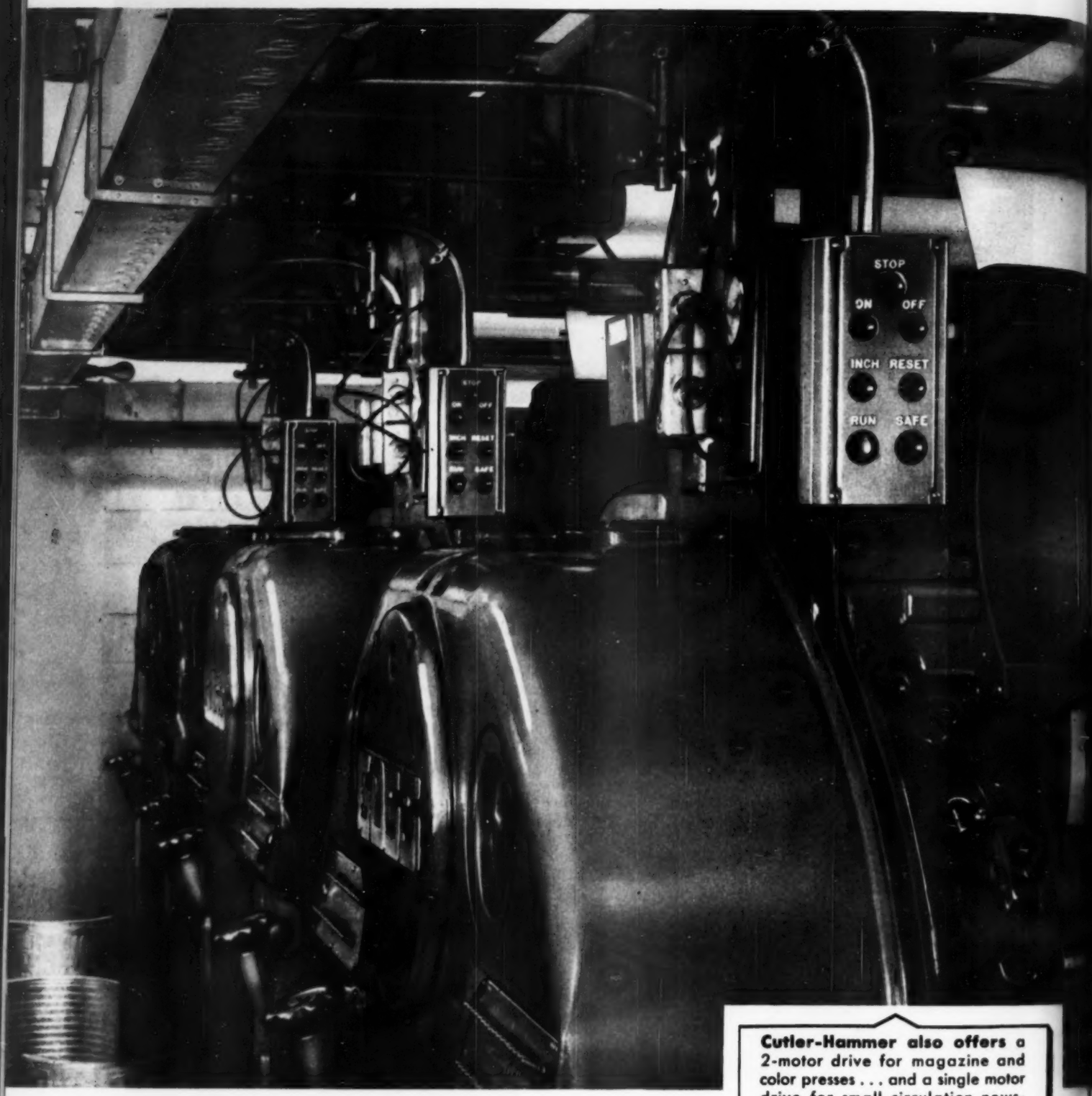
So when you make-ready for one sheet of Mead paper, you can depend on the following sheets being just like it. You'll get the same ink acceptance. Your halftones will come out as you expect them to. Test them with a densometer some time, just for your own satisfaction. Uniformity permits economical runs, and whether you want uniform paper for letterpress, offset or gravure printing, you can get it *all* from Mead, Papermakers to America.

**THE MEAD CORPORATION**
*Papermakers to America*

**MEAD papers**

**Sales Offices:** Mead Papers, Inc., 118 West First Street, Dayton 2, Ohio ★ New York • Chicago Boston • Philadelphia • Atlanta

# For its New 6-Unit




New Goss press units in plant of Bridgeport Post-Telegram. Equipped with Cutler-Hammer Unit Drive.

**Cutler-Hammer also offers** a 2-motor drive for magazine and color presses . . . and a single motor drive for small circulation newspapers. Both types are extraordinarily successful.

# *The Keep-it-Simple...Keep-it-

# One-Folder Press

# BRIDGEPORT POST-TELEGRAM Chooses CUTLER-HAMMER*

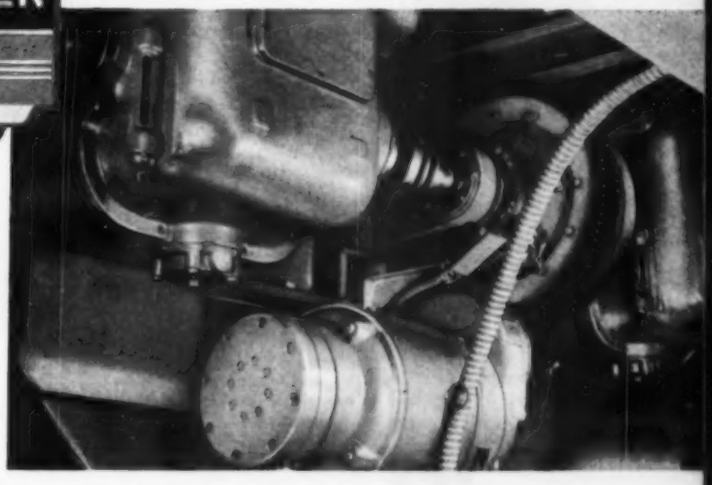
They come—big, small, middling . . . the newspaper publishers of the U. S., Canada, even far-off Australia . . . to the simple, sturdy Cutler-Hammer Unit Press Drive.

The Bridgeport, Conn., Post-Telegram is typical. With a combined circulation of 90,000-plus, it turns to C-H for the drives on its latest *additional* unit-press installation. The big thing is that although C-H offers you everything . . . speed, ease of operation, dependability and economy, it also offers *SIMPLICITY*. Your plant electrician can understand it. Ask a representative to call. CUTLER-HAMMER, Inc., 1460 St. Paul Ave., Milwaukee 1, Wisconsin.

CUTLER-HAMMER
MOTOR CONTROL
C-H

mary controller for the A.C. unit type press drive signed by Cutler-Hammer for the Post-Telegram.

Threading motor which is disconnected mechanically and electrically when the unit drive motors take over.



**CUTLER-HAMMER WEB BREAK DETECTORS**

Stop press quickly if web breaks. Web can be rethreaded without latching detectors. Easy to mount.

**CUTLER-HAMMER WEB SEVERING DEVICE**

A Cutler-Hammer "original" that has resulted in greater total savings than any other single accessory. It instantly slashes broken web close to impression and guards against destructive wrap-arounds and costly delays—resets automatically.

# STURDY Unit Press Drive

**time for a seasonal change to**

# WINTER-TYPE RAPID COMPOSITION ROLLERS

Winterize your presses now with winter-type RAPID COMPOSITION ROLLERS — and you won't have to worry about an early cold wave. Be sure to order RAPID Rollers — the pressman's favorite for more than a generation — and constantly improved, so that today they remain the last word in Composition Rollers.

## RAPID ROLLER CO.

**FEDERAL AT 26TH ST. • CHICAGO 16, ILLINOIS**

# Up to 100,000 boxes hourly ...with

# Staude

# INLINE GRAVURE OPERATION

## New, large installation now in operation at NATIONAL FOLDING BOX COMPANY

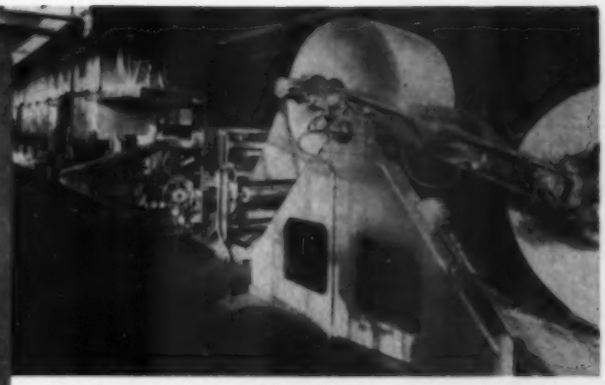
After eleven years of trial and research on gravure inline operation for folding carton application, the National Folding Box Company Division, Federal Paper Board Company, Inc., at its New Haven, Conn. plant, now produces cartons at rates of 25,000 to 100,000 hourly, depending on carton sizes. Of the six primary machine units, as shown in the diagram, three of them include a Staude "Turnover" Roll Stand, a Staude automatic Butt Splicer and a battery of six Staude gravure printing units. With this inline setup, a continuous web of paperboard up to 44" wide passes between the roll and cylinder in each unit—with equalization of pressure hydraulically controlled.

According to National, rotogravure printing with resultant superior printing and color qualities, wide range of tone values and color consistency makes for both *quality* and *production*. It marks a major step forward in a 65 year effort on the part of National to supply the consumer with superior boxes. *For details on how rotogravure can apply to your operation, write without obligation for the complete Staude Rotogravure story.*

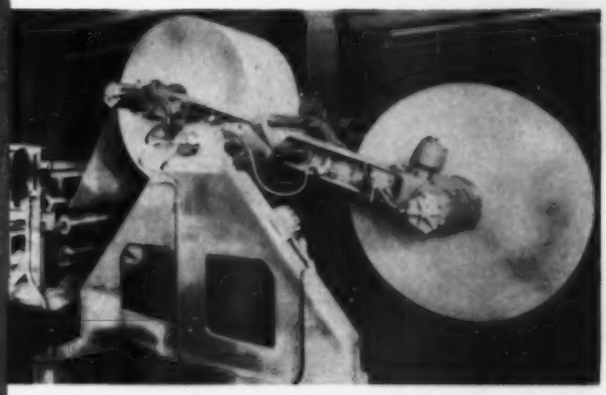
E. G. Staude

**MANUFACTURING CO., INC.**

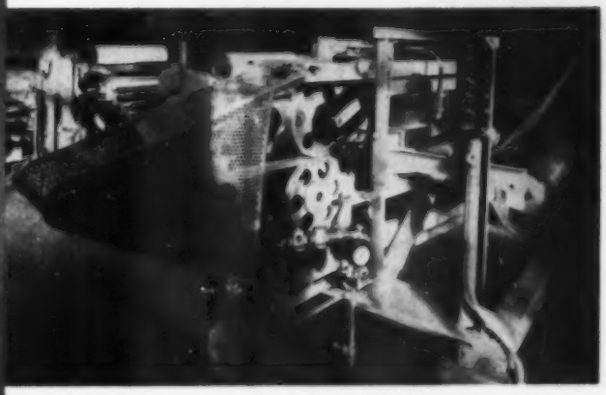
Rotogravure Press Division: SPRINGFIELD, VERMONT



**PNEUMATICALLY CONTROLLED, Staude continuous-feed roll stand, automatic butt splicer and six gravure printing units are shown here from the infeed position.**



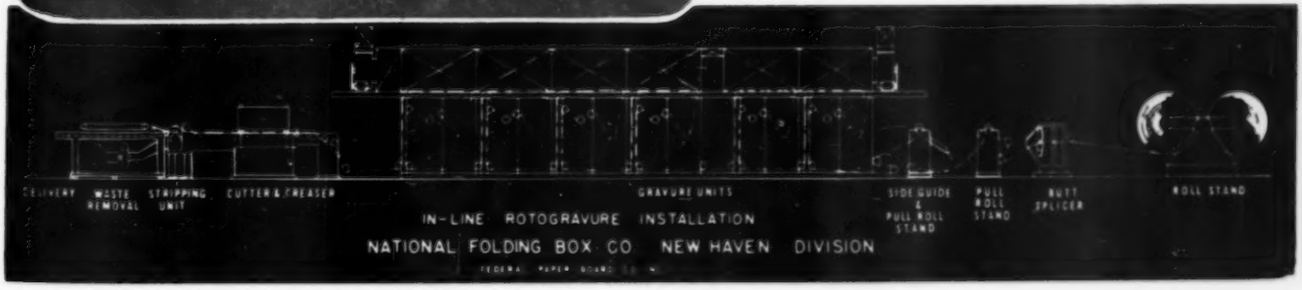
**STAUDE TURNOVER ROLL STAND has pneumatic controls. Device will handle rolls of paperboard measuring up to six feet in diameter and weighing up to 4000 pounds.**



**STAUDE AUTOMATIC BUTT SPLICER and side guide table pictured in this close-up view prevents any interruption in operations when changing rolls. A split second is all that is needed to splice a new roll to the end of the completed roll of paperboard—no need to stop the press.**

**EASTERN OFFICE:** 35 Beechwood Ave., Mt. Vernon, N. Y.
Phone: Mt. Vernon 4-3753

**CHICAGO OFFICE:** 82 West Washington Boulevard
Phone: ANdover 3-4980



*the Man from Morrill*

## gives you fast, accurate delivery

Nationwide distribution and the maintenance of adequate stocks of Morrill News Inks make it possible for the Man from Morrill to assure you of prompt delivery on all your news ink requirements. And whether your news ink is delivered in drums or Morrill tank trucks—equipped for your protection with modern metering equipment—you always receive every pound you pay for.

Fast, accurate delivery is of course, only part of the Morrill story. In addition to dependable service, the Man from Morrill offers over 116 years of experience in solving news ink problems, and the reputation for providing inks of highest quality and uniformity.

That's why, when you buy newspaper inks . . . you have a definite reason for talking to the Man from Morrill.

*A Division of* Sun *Chemical Corporation*

**Geo. H. Morrill Company**

**10th Street & 44th Avenue, Long Island City 1, N. Y.**

**DIVISIONS OF SUN CHEMICAL CORPORATION**

**HORN** (paints, maintenance and construction materials, industrial coatings) • **WARWICK** (textile and industrial chemicals) • **WARWICK WAX** (refiners of specialty waxes) • **RUTHERFORD** (lithographic equipment) • **SUN SUPPLY** (lithographic supplies) • **GENERAL PRINTING INK** (Sigmund Ullman • Fuchs & Lang • Eagle • American • Kelly • Chemical Color & Supply Inks) • **MORRILL** (news inks) • **ELECTRO-TECHNICAL PRODUCTS** (coatings and plastics) • **PIGMENTS DIVISION** (pigments for paints, plastics, printing inks of all kinds) • **OVERSEAS DIVISION** (export) • **A. C. HORN COMPANY, LIMITED** (Canada) • **GENERAL PRINTING INK CORPORATION OF CANADA, LIMITED** • **FUCHS & LANG de MEXICO, S. A. de C. V.**

...Cedar Rapids Gazette

solves type melting problems

with 3 Kemp Pots...

Type melting at the Cedar Rapids (Iowa) Gazette is cheaper, faster and cleaner since the newspaper installed 3 Kemp Melting Pots.

The pot sizes are 7 tons, 7,000 pounds and 3,200 pounds. They are kept full at all times, with temperatures automatically controlled between 575 and 630°F. To save fuel, all 3 pots can operate at once on one Kemp Carburetor.

**Kemp saves time and costs**

According to Mr. Tom Caldwell, stereotype superintendent, "We've been able to expedite production and processing at a higher rate than before. We especially like the temperature uniformity and quick response of the immersion burners. Good insulation makes working conditions more comfortable." There has been no pot breakage or down-time on any of these Kemp units since installation in 1951!

**Let Kemp help you**

Kemp Immersion Heating can solve your melting problem too. Kemp engineers will be glad to show you how. For complete facts, write today.

**IMMERSION MELTING POTS**

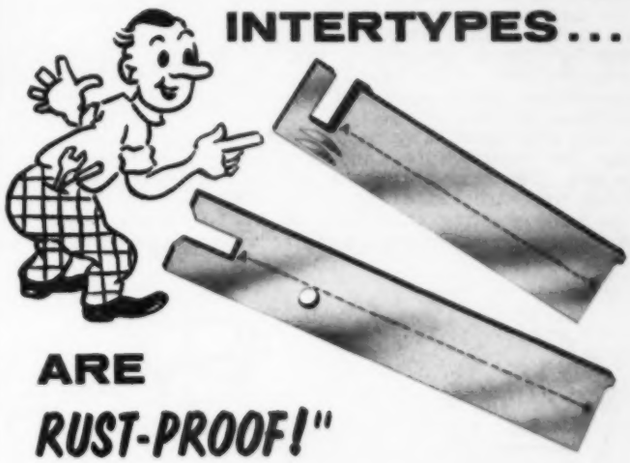
**KEMP OF BALTIMORE**

ATMOSPHERE & INERT GAS GENERATORS
ADSORPTIVE DRYERS
SINGEING EQUIPMENT
CARBURETORS
BURNERS • FIRE CHECKS
SPECIAL EQUIPMENT

**THE C. M. KEMP MFG. CO.**
405 E. Oliver St., Baltimore 2, Md.

## Louie Linecaster says:

## "STAR LINERS FOR LINOTYPES AND INTERTYPES...



## ARE *RUST-PROOF!*"

...and because they are made of stainless steel, they are tougher. An exclusive STAR feature is the end to end taper (A-B) made to consider the warp to which every mold is prone. This reduces the chances of feathers on the end of the slug. STAR Liners are hand finished and individually inspected to insure extreme accuracy. STAR Liners are made to save you money ...when you buy...and while you use them.

## STAR LINER CUTTING GAUGE

...a new emergency tool that enables you to cut liners to emergency measures. Keep this gauge on hand as insurance against delays caused by calls for unexpected lengths of line. Order by STAR Part No. Z-127-L for Linotype liners and Z-127-I for Intertype liners, Z-127-S for the combination.

Precision TRADE ★ MARK Parts

**STAR PARTS, Inc.**
SOUTH HACKENSACK, N. J.

BRANCH: 1337 BROADWAY, KANSAS CITY, MO.
AGENCIES:
CHICAGO • MINNEAPOLIS • LOS ANGELES • DENVER • BOSTON
CANADA: SEARS LTD. and Agents Overseas

## Equipment & Supplies

(Continued from Page 20)

stated, do not intend to compete with the large composing machine manufacturers whose matrices are produced by mass production in large numbers but rather for the more specialized requirements of the individual printer.

The aluminum alloy used in making the matrices is announced as having the same hardness as the brass previously used and will yield the same wearing qualities. To indicate the durability of the matrices, Director J. T. Richardson states: "In one test 5700 sorts 3 ems by 3 ems were cast from a matrix containing intricate detail at a speed of 10 per min. continuously, using 12/24 metal at a temperature of 750 deg. F. with no ill effects whatever." For further information, please contact the company at the address given above.

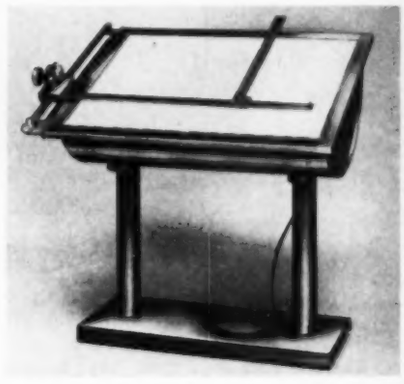
### Carbide Tipped Saw Blades

The Forrest Manufacturing Co., Inc. announced the design of a carbide tipped saw blade for individual requirements. The blade is designed for cutting and trimming electros, stereos, zincs, copper plates, plastic plates, and for cutting and mitering of slugs, etc. Manufacturer states gullets and expansion slots are milled to eliminate metal fatigue. The

tops are of carbide and are wedge fitted to the tooth before brazing. Sponsor states the blade is true with a total runout of 0.0005 in. For further details, please mention PEE No. 234 in your request.

### Tilt-Top Table

Zarkin Machine Co., Inc. announces the Tilt-Top Layout and Stripping Table. This 23 in. by 34 in. table, according to Herbert Blomquist, manager of the Graphic Arts Equipment Div., is recommended for the small shop—or an auxiliary for the large shop—for the preparation of flats for press plates, combining negatives, opaquing, tracing, ruling of business forms, squaring up and lining up. The Lewis Precision Litho-Ruling and Stripping Table Attachment fitted to the table may be had



as optional equipment. The table tilts from flat to a 30 deg. angle. Its base is all-welded steel. The squared top contains a pencil tray in its forward edge. The translucent glass is lighted by fluorescent tubes for even diffusion. Two knobs control the angle of the top. For further details please mention PEE 241 in your request.

### Light Integrators

Unitronics, Incorporated recently announced a series of light integrators called Essar 39. The instruments are used to meter light at the copyboard and automatically extend or shorten exposure time as light intensity varies due to change of lamp position, voltage variation or change of color temperature of light source. The Model 39 is recommended for camera use, and the Model 300 and Model 900 are for use on photocomposers' and printing frames. All Se-

(*Continued on Page* 78)

*Less Shrinkage Lengthwise with Burgess Mats*

Burgess Mats shrink less lengthwise for a given width shrinkage. That makes Ad Managers happy. And Burgess Mats always give you best possible reproduction. That makes everybody happy. So why not do as every Ayer Cup winner for eight straight years has done? Use Burgess Mats!

**BURGESS CELLULOSE COMPANY**

Manufacturers and Distributors of Burgess Chrome and Supreme Tone-Tex Mats, Freeport, Illinois

Canadian Representative, R. M. Lousen & Co., Ltd., Kennedy Road, Agincourt, Ontario

BURGESS Chrome MATS

# IT'S A HEADLINER®

## FOR THE CITY OF STEEL

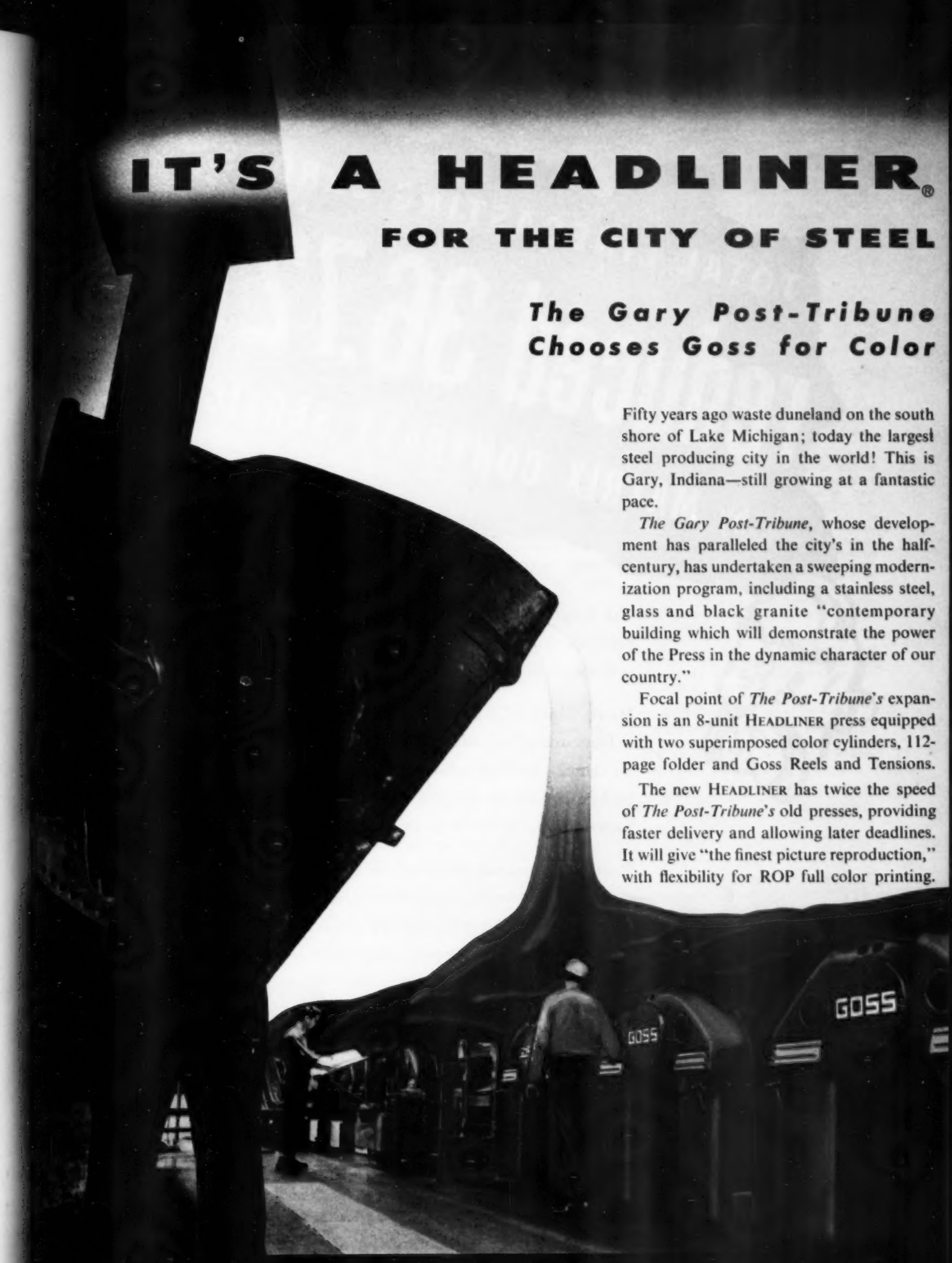
### *The Gary Post-Tribune Chooses Goss for Color*

Fifty years ago waste duneland on the south shore of Lake Michigan; today the largest steel producing city in the world! This is Gary, Indiana—still growing at a fantastic pace.

*The Gary Post-Tribune*, whose development has paralleled the city's in the half-century, has undertaken a sweeping modernization program, including a stainless steel, glass and black granite "contemporary building which will demonstrate the power of the Press in the dynamic character of our country."

Focal point of *The Post-Tribune's* expansion is an 8-unit HEADLINER press equipped with two superimposed color cylinders, 112-page folder and Goss Reels and Tensions.

The new HEADLINER has twice the speed of *The Post-Tribune's* old presses, providing faster delivery and allowing later deadlines. It will give "the finest picture reproduction," with flexibility for ROP full color printing.




## THE GOSS PRINTING PRESS CO.

# TOTAL LINECASTING ERRORS reduced 36.727% by MATRIX CONTRAST SERVICE!

The installation of Matrix Contrast Service in a leading San Francisco daily newspaper plant reduced total linecasting errors — news, classified, and stock composition — 36.727%.

Matrix Contrast Corporation, the originator of contrast matrices in black and white *and* color, has proved its process over a quarter century. Brilliant white or colored pigments on a jet black background are used in the reference marks of mats in newspaper plants and job shops from coast to coast.

Completely audited figures of the composing room proofs of this prominent San Francisco daily — before and after the application of Matrix Contrast Service — are available for inspection. This application — as the many others coast to coast in newspaper plants and job shops — proves that Matrix Contrast Service saves time, money, and eyesight.

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PRINTING
EQUIPMENT
*Engineer*
October 1956

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# Production Controls For Large Scale Magazine Printing

**At The Curtis Publishing Co.'s Sharon (Pa.) plant, webs speed through automated presses at 1600 f.p.m.**

**By JOSEPH C. BRONSON***

**Assistant to Superintendent, Manufacturing Dept., The Curtis Publishing Co.*

The Manufacturing Department of The Curtis Publishing Co. is a service department. We print what the company requires. It is our job to print magazines of the highest possible quality in their price class as economically as possible, and to schedules which will enable our Traffic Department to meet sales dates.

Joint effort of the interested departments is necessary to formulate publishing schedules. The task of tying all schedules together belongs to a separate division of the company. This is called the Schedule Division. Organizationwise, it functions under the Business Department.

Schedules are important. They comprise a determining factor in our decisions and methods. Like railroads. if schedules weren't involved, many things would be done differently.

The size[1] and nature of our magazines have a considerable effect on schedules, on plant locations, and methods of operation.

The *Post* is a weekly—average circulation about 4,800,000—and is in the general interest classification.

The *Journal* is a monthly women's magazine—average circulation over 5,000,000.

*Holiday* is a monthly magazine—average circulation about 900,000.

*Jack and Jill* is a monthly children's magazine—average circulation about 750,000.

Now, as to the size or magnitude of the Manufacturing Department's job, this can be illustrated best by the use of a few figures.

Last year we produced about 50 billion book pages—over 360 million magazines—or over a million and a third magazines each working day.

In doing this, we processed about 400 million lbs. of paper, requiring about 12 million lbs. of ink.

We handled over 30 thousand original engravings—more than half of which were from hundreds of different engraving sources in the country.

Thus, it is a rather sizable job, almost any way you wish to measure it, and it is further complicated by the fact that a large percentage is in color. Each page of each magazine is different each issue and must be handled as a special item and carefully fitted into the whole operation.

The discussion in this article is confined to a description of the methods we employ to meet our own manufacturing problems in our own plants.

All of our work is done by rotary letterpress. We use this method because of our experience with it and because we believe it is best adapted from a quality, cost, and flexibility standpoint for our specific requirements.

Like other companies, due to forecasts of increased business to follow World War II, we started planning for a new building to house new press and other associated equipment.

Before final determination of the building size, however, it was necessary to determine size of the larger presses and related equipment which we planned to install. The problem was resolved into literally erecting a building over arbitrary press, binding and service requirements, with suitable railroad and truck transportation facilities.

The design of the presses could be a story in itself. In analyzing our problem, our first objective was for a machine which would produce better quality work.

### Planning for Type of Presses

We wanted a press on which could be produced a signature of *X* circulation in a week, running at *Y* per-

**Headquarters and main plant building of The Curtis Publishing Co. are located in historic neighborhood, Independence Square, Philadelphia. In foreground is Independence Hall.**

[1]Circulation and paging.

**View of printing, publishing and mailing plant of The Curtis Publishing Co., Sharon Hill (Pa.) a suburb of Philadelphia. Building occupies about 15 A. in 600,000 sq. ft. of space. Overall length of building is approx. 1225 ft. and 317 ft. wide. Height in the Pressroom is 42 ft., in the Bindery 16 ft., exclus ve of first floor elevation.**

cent of rated capacity. This figured out to be approx. 1600 f. p. m. rated speed (almost double previous speeds) and gave the Engineering Division a tremendous task to shoot for. This division worked with the press builders on press design and made the calculations and designs for drying, cooling and electrical equipment.

The magnitude of the drying and other auxiliary equipment can be understood from the fact that whereas the top of the printing unit is about 11½ ft. from the floor, a building height of 62 ft. from reel floor to ceiling is needed for the whole printing and drying unit. The steam drums are 10 ft. diam.

In time, most of the problems associated with press design were worked out to the point where we were able to proceed with the new building.

### The Building

The building occupies about 15 acres and takes up to 600,000 sq. ft. of space. Its overall length is approx. 1,225 ft.; width, 317 ft.; height in the Pressroom, 42 ft.; and in the Bindery, 16 ft.; exclusive of first floor elevation.

We began operations in the new plant with the first press in September of 1947, and bound the first complete *Post* in this building in March 1948.

### Workflow and Materials Handling

Paper comes in by railroad or truck at one end of the building, at ground level, is stored near presses and then is put on the reels and fed up into the first printing unit on the main press floor overhead. It is printed in four or five colors, dried, turned at right angles, and then again at another right angle and is fed into the second side printing unit.

From here it goes through the second drying unit into the folder and into the delivery. The printed, dried, and folded signatures are stacked on trucks and moved eastward out of the pressroom into the storage area. From there, the stock is transferred directly to the back of the binders.

Here the various signatures are fed into the binding machines, which gather, glue the cover, stitch, and trim the finished magazine.

At this point, the bunches of the finished magazines are placed onto trays on a conveyor, The conveyor carries the books to the floor below into the Traffic or Shipping Department, where they are addressed, tied in bundles, packed, weighed, and placed in railroad cars or trucks for shipping. These cars pass out of the building onto our railroad spur, joining the main line of the Pennsylvania Railroad, or, if by truck, around the building and out to the main highway.

To me, it is just as interesting and informative to know *how* the job is done as it is to know *what* is being done—and I thought you, too, might be interested in a brief outline of how we are organized and some of the procedures we try to follow to accomplish our job.

The chart (below) showing the general organization of the Manufacturing Department, may give you a quick overall picture.

We are set up in a straight line organization, with the Vice President and Director of Manufacturing in charge. Day-to-day operations are the responsibility of the plant Superintendent. We have a number of operating divisions that perform the work of their respective functions. Each division is headed by a manager. Under him is an assistant, the required number of foremen and assistant foremen—perhaps even general foremen, clerical and staff help and many plant employees.

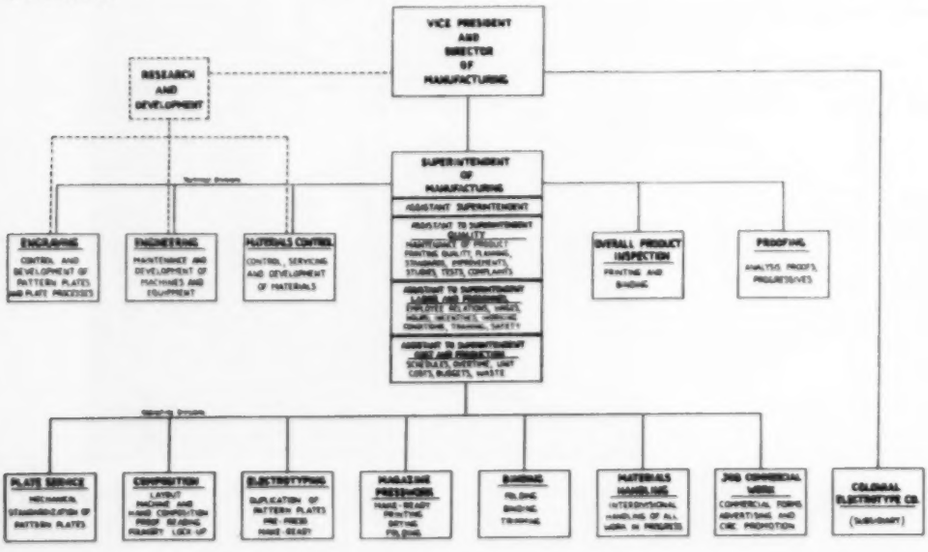
The managers report directly to the Superintendent and, through him, to the Vice President, or directly to the Vice President.

Within the office of the Vice President and the Superintendent are a number of men to assist in the various activities. These are staff men reporting to the Superintendent and the Vice President. The work is split functionally three ways, with an individual heading each function. The three functions are Quality, Cost and Production, and Personnel.

In addition to the staff men there are staff or service divisions, such as Engineering, Materials Control, Engraving, Proofing, and Inspection. These divisions serve the other manufacturing divisions, or in the case of Engineering, the whole company.

Our divisional organization will vary, depending upon the size, the nature of the work, and the complexity of the functions.

*This chart shows the manufacturing organization of The Curtis Publishing Co. Within the office of the Vice President and the Superintendent are a number of men to assist in the various activities. The work is split functionally three ways with an individual heading each function which consist of Quality, Cost and Production and Personnel. Personnel.*




### Authority and Responsibility

Throughout our organization there are direct lines of authority and responsibility. Each division is held accountable for the work it produces. It has the right to reject the work of the preceding division. If there is a question as to the quality of the material a division is asked to accept, it is referred to the Quality section in the Superintendent's office.

If an error is made, or subquality work is produced, the responsibility is fixed. If there is a cost involved in correcting the work or getting

Fig. 1—Partial view of one of the YY (Cottrell) printing presses in plant of The Curtis Publishing Co. With the web speeding through this press at 1600 f.p.m. five colors can be printed on each side of the web with the heat-set inks properly dried on steam drum equipment. Folded signatures are placed on skids for delivery to the bindery.

Fig. 2—Delivery end of five YY (Cottrell) rotary printing presses. Here the tremendous production of some of the Curtis publications are lifted from the folder conveyors and are carted to the bindery by electric trucks.

Fig. 3—Here is shown one of the two printing units on a YY rotary printing press. The roller carriages have been rolled back from each side of the unit. One of the five plate cylinders is shown upon which electrotypes are fastened by plate hooks adjustable in the spirally grooved plate cylinder.

Fig. 4—The pressman is dressing one of the press color plate cylinders with electrotypes. Plates are held at beveled edges in exact registered position by hooks which are infinitely adjustable.

Fig. 5—Under the ever watchful and critical eye of the pressman, the color printing is compared with engraver's progressive proofs as the run proceeds. Much skilled work and meticulous care has been put into the making of the original engravings and the electrotypes. Here in the pressroom, the color printing is reproduced exactly as intended by editor or advertiser.

Fig. 6—To maintain correct register on the multi-color press, this electric eye device not only scans the rapidly moving web but also through associated mechanisms automatically corrects its position both circumferentially and crosswise of the cylinder so as to maintain register to close tolerances.

Figs. 7 and 8—Here is shown (Fig. 7) the electrical control panel of one of the YY printing presses and in Fig. 8 a rear view of the panel. This panel is the heart of the amazing and sensitive electrical control system. On the front of the panel are mounted the relays, which in turn control the 41 motors, automatic web splicing reel, ink drier temperature control equipment, web severing devices, brakes, alarms and indicating lights.

The YY full automatic printing press is driven by two 10 h.p. motors and two 300 h.p. motors, controlled from any one of 12 control stations. The control stations are connected to 196 relays, solenoid valves, cylinder brakes, web choppers, etc., through more than four miles of electric wiring.

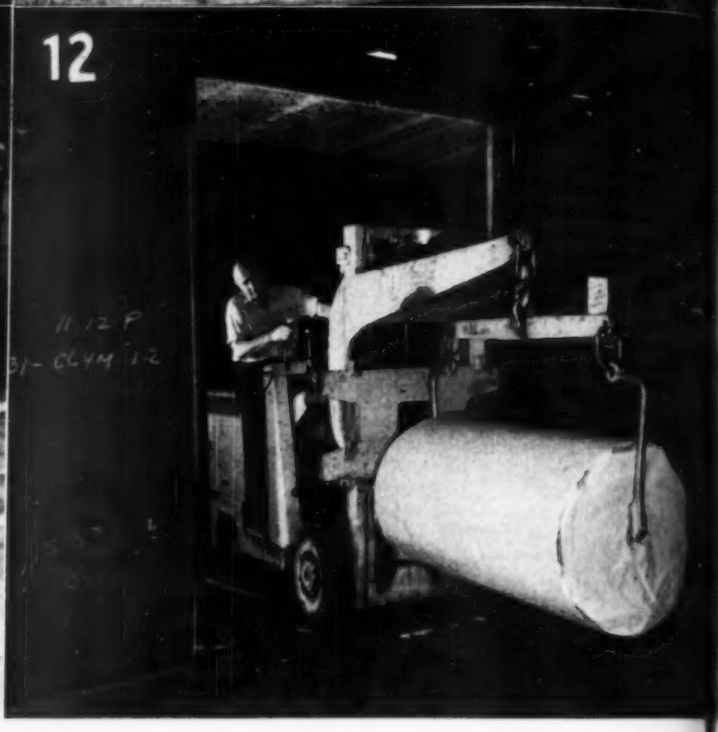



**Fig. 9—Part of the periodical bindery of The Curtis Publishing Co., Sharon Hill (Pa.) plant. This type of machine automatically gathers signatures making up a magazine, stitches and trims and delivers the trimmed books on a flat delivery conveyor. A crew member (upper left of center) lifts stacks of magazines from the delivery and places them on the moving conveyor running lengthwise of the room where they are delivered to the traffic department. Shown at right one bin of that part of the machine consisting of bins for each of the signatures to be gathered, feeding mechanism and moving conveyor.**

**Fig. 10—East end of the Sharon Hill (Pa.) plant of The Curtis Publishing Co. The railroad and truck shipping bays permit rapid movement of publications to readers.**

**Fig. 11—In this picture magazines are being loaded for shipment. This happens to be a refrigerator car. Many such are used since they usually travel East filled, and West empty, unless used for such a purpose.**

**Fig. 12—Roll paper is taken from the railroad car by power truck and is then transported to temporary storage or perhaps (if the live supply is low) is brought alongside the press reels in the reel room just below the pressroom floor.**

back on the track, the division responsible bears the cost. Such a method of operation is not practical, of course, without standard procedures and standard practices. Minute and detailed specifications and procedures are written up on all of our repetitive manufacturing operations and are placed in the hands of each division and each person involved. This, we believe, is one of the most important aspects of Quality, Production, and Cost Control.

When we make an error or get off the track, the first thing we do is to review our standard procedure. No division is permitted to deviate from standard procedure without the approval of the Quality Section of the Superintendent's Office, and this is a rare occurrence.

If it is desired to change a method or procedure, from either a Cost or a Quality or a procedural standpoint, the proposed new method is reviewed by all concerned. It is not put into effect until the new standard practice is written and agreed upon by all concerned. Then the new method is followed until changed. Invariably, when something goes wrong, it is because someone along the line has deviated from standard practice.

We have detailed production schedules for all of our divisions. The Press and Bindery schedules show the daily production requirements by shift and cumulative production re-

*(Continued on Page 84)*

# Automation

*(Bronson's comments regarding automation in Curtis Publishing Co.'s printing plant)*

While on the subject of engineering, we might spend a few moments in discussing automation, since it seems to be the present craze making the rounds in all management, engineering and labor conferences.

Automation is little more than a copywriter's word for mechanization. We have it in our business to a higher degree than many even in our industry seem to realize.

First, take the paper. From the time the logs are dropped into the chipper and the chemicals into their vats until the rolls come out at the other end at the paper mills, it is the continuous operation.

The actual printing and binding has been reduced to two major processes. A roll is placed on the automatic splicer, and from there it becomes a folded signature with four or five colors printed, dried on both sides—in one operation, largely electrically or mechanically controlled—in about 10 sec.

The last operation consists of gathering, pasting, stitching and trimming the different signatures into a finished magazine—in about 22 sec.

Let's take a little closer look at one of these presses and its operation.

The YY full automatic printing press is driven by two 10 h.p. motors and two 300 h.p. motors from a 230 v. d.c. source and is controlled from any one of 12 control stations. The control stations are connected to 196 relays, solenoid valves, cylinder brakes, web choppers, etc., through more than four miles of electric wiring. Each press has 41 electric motors associated with it.

The heart of the electric control system is the main control panel upon which are mounted the relays, which in turn control the motors, automatic web splicing reel, gas-burning temperature control equipment, web severing devices, brakes, alarms and indicating lights. All of these devices are supervised from a master switch also located in the main control panel.

Each control station consists of six push buttons marked *Safe, Run, Fast, Slow, Jog,* and *Stop.*

When the *Run* button is pushed, it makes available all the maze of controls for running the press, with indicating lights to show all concerned that the press is ready to start.

Pressing the *Fast* button sounds an alarm, and after a few seconds the press begins to roll at a very slow speed from the driving arrangement of two 10 h.p. electric motors. As the press begins to turn at this slow speed, the automatic web tension control of the reel begins to operate. At the same time, the automatic web splicing control circuits are made available so that the web may be spliced while the press is running.

Another push on the *Fast* button and the two 10 h.p. motors are de-energized and two 300 h.p. motors take over driving the press, but still at a slow speed.

Continued pressing of the *Fast* button increases the speed. At a predetermined value, through a series of relays, the gas burning temperature control equipment, solenoid valves for refrigeration systems, oil pumps and photoelectric equipment are automatically put into operation.

The speed of the press is increased to the desired running speed by continuing to push the *Fast* button. If it should be desired to limit the press speed at any value, the *Safe* button is pushed. Through a set of interlocking relays, the press speed is limited even though the *Fast* button is again pushed.

Pushing the *Stop* button or any of the emergency *Stop* buttons will stop the press immediately without breaking the web.

All the time the press is running, it is under the watchful eye and supervision of hundreds of safety devices. Each of the 41 electric motors is protected against electrical or mechanical failure by an overload relay.

Many safety relays and devices are used on the gas-burning temperature control equipment to protect against failure of any part of that equipment.

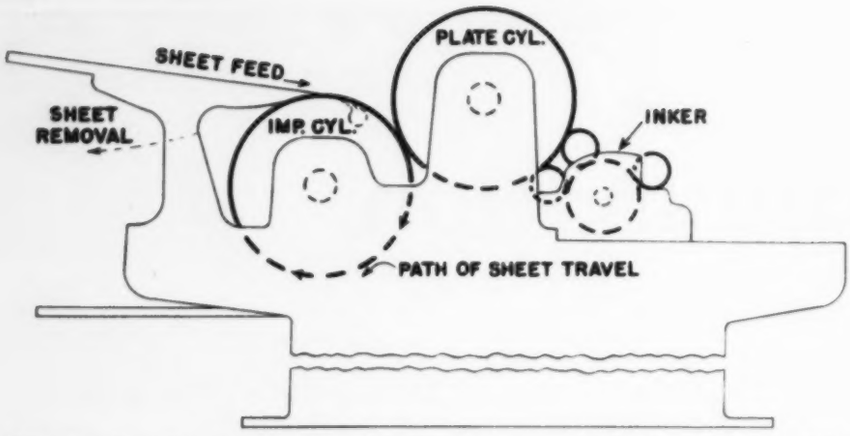
There are five photoelectric devices or so-called "magic eyes" that keep the web of paper in its proper position as it passes through the press. They not only scan but correct the web position.

Paper web detectors are placed at strategic points on the web. Should the web be broken at any point, the press will stop fast, but smoothly, with the web remaining intact throughout the rest of the press. At the same time, the damaged section of paper is automatically cut so that mechanical damage to the press may be avoided or minimized.

The automatic web splicer is put into operation by the operator. The complete operation of the splice at running speed is then under the direct control of phototubes, timers, solenoid-operated brushes and knives. There is also an automatic signal to the press crew of the exact progress of the splicing operation. It is not unusual for our records to show as few as two misses in almost 500 completed splices.

This press is controlled by voltages as low as 1 v. to well over 600 v. using direct current, alternating current, half wave and full wave, with lights, bells, motors and relays to coordinate this great maze to a few easily operated push buttons.

This is automation to a very high degree.




*Side elevation diagram of Cottrell newspaper curved stereotype 7/16 in. plate proof press. Allowance for cylinder packing on press being installed in Chicago* Tribune *is 0.105 in., equivalent to production press packing. The plate head stop on the press cylinder is fixed. A movable two-position plate side stop is fastened to the cylinder with countersunk head screws.*

# Curved Stereo Color Plate Proof Press

Newspaper r.o.p. color printing, it might be said, is still in its infancy. Its volume has been increasing perceptibly of late in the 1750 daily newspapers. Up to the moment, much r.o.p. color printing has been and is being done without proper mechanical equipment. Equipment manufacturers, however, have been rising to the occasion by designing necessary essential equipment to produce color printing rapidly in regular daily editions. Another thought in this connection is that in order to do really creditable color printing, newspapers must equip themselves with proper equipment so that when the stereotype plates are delivered to the pressroom, the presses may be started with minimum waste of precious time. Thus it can be seen that the more nearly the ponderous stereotype plates have been fabricated in register with each other, the sooner the presses can be started for rapid delivery of printed copies.

Cognizance is taken of the fact that all newspapers need not equip themselves with all of the expensive machinery designed to produce better r.o.p. color printing. In so many instances the mat and plate services fill the need to a large extent.

In those plants where the volume warrants, it is inevitable that equipment will be installed. One of these items is the recently announced Cottrell curved stereotype plate proof press. This was designed to duplicate the printing conditions of high speed newspaper presses as nearly as possible.

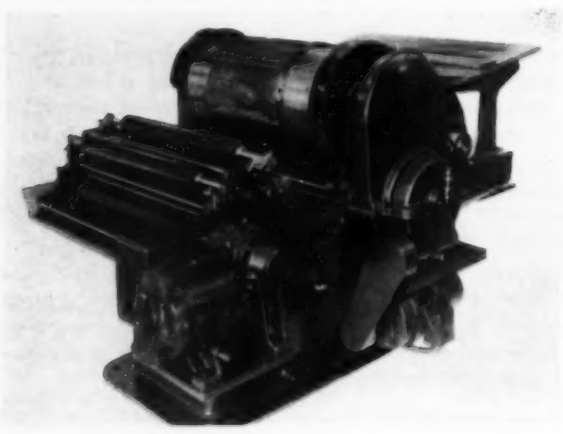
The first of the new presses will be installed in the stereotype department of the Chicago *Tribune*. The production department of the *Tribune* participated with Cottrell in the design of the press. The first press will be used for proofing both black and color plates. It also can be used in other operations such as the preparation and treatment of matrices for press makeready, and for testing the suitability of inks, papers and color arrangements. It is a one revolution and stop machine that delivers a proof in one and one-half seconds.

"Since it utilizes the same printing technique and same cylinder diameter as production presses, the press delivers a proof that is genuine evidence of the printing quality of a plate," according to S. C. Saunders, Cottrell vice president. "The proof is taken without makeready under conditions which simulate conditions on the production printing press."

One of the ways the *Tribune* plans to use the new press is to obtain a proof of a stereotype plate before finishing it, so the proof can be used as a guide for finishing. Another use will be to spot possible defects in the pattern and the makeready on the mat, so that corrections can be made before making an entire set of plates. In color separation jobs, the *Tribune* will use the press to obtain proofs to be used as routing guides, and to check color registration between plates.

The press is similar to the curved plate proof presses which Cottrell builds for magazine publishers and commercial printers, but it is designed to accommodate heavier newspaper stereotypes. It has been built as low as practicable so that the operator does not have to raise the heavy plates much higher than his waist in putting them on the press. It occupies a floor space of 58 in. by 80 in. and weighs 3000 lbs.

Frames, cylinders and bearings are heavy and rigid to assure retention of original accuracy. A special inker which is operated by its own motor when in the back position, makes both washup and ink distribution easier. The grippers are foot operated, while hand levers control the impression trip and engagement of the power drive. Knurled adjustment knobs are provided to run the plate hooks into position quickly. The feedboard is hinged to permit access to the impression cylinder for renewal of packing.



*The Cottrell newspaper curved stereotype plate proof press duplicates, as nearly as possible, the printing technique and cylinder diameter of production presses.*

### Crane Buys Byron Weston

Arrangements were completed recently for the purchase by Crane & Company, Inc. of all outstanding stock in Byron Weston Co. In announcing the purchase, Bruce Crane, president of Crane & Company, and Robert Crane, president of Byron Weston Co., stated Byron Weston Co. would continue to operate as a separate corporate entity under its present name.

### Opens Cleveland Showroom

A Cleveland showroom was opened early in September at 2430 Euclid Ave., according to announcement by J. J. McCall, administrative manager, Heidelberg Eastern, Inc., Long Island, N. Y. Under direction of the Columbus, O., office, the showroom will be managed by James D. McCann. On display are the new Original Heidelberg Cylinder 21 in. by 28 in. presses and Original Heidelberg Platens in 10 in. by 15 in. and 12 in. by 18 in. sizes.

## Caught by the Camera at Los Angeles Craftsmen's Convention

1—At the signposts were James Keating, manager, Bingham Bros. Co., Baltimore; Howard King, vice president, Maple Press, York, Pa.; Fred Gross, production manager, San Francisco *Chronicle*.

2—Andre Hugues, printing department manager, Harry Turner & Assoc., Inc., Topeka; Harold Lauck, printing laboratory manager, Washington & Lee University, Lexington, Va.; T. George Gates, cameraman, Johnson-Cox Co., Tacoma, Wash.; Harold Berg, printing instructor, Board of Education, Duluth, Minn.

3—Carl Larsen, sales representative, Braden-Sutphin Ink Co., Indianapolis; Frank Kane, Kane Art Studio, San Francisco; Walter Soderstrom, executive vice president, National Assoc. of Photo-Lithographers; Arthur Bonifer, sr., Linotype machinist, Concordia Publishing House, St. Louis.

4—Bert Menne, Lithoplate, Inc., Los Angeles; Karl Hoffman, Printing Developments, Inc., San Francisco; Edmund Knopke, Lithoplate, Inc., San Francisco.

5—Admiring prizes awarded by Heidelberg Western Sales Co. were Mr. and Mrs. Louis Longwenus, California Lithoplate, San Francisco; Max D. Hiscock, Drew Printing Co., Seattle.

6—Eugene Gallagher, production manager, Knight-Counihan Co., San Francisco; George Y. Martin, superintendent, Oregon State College Press, Portland, Ore.; Franklin Johnson, superintendent, New Publishing Co., Sacramento, Calif.

7—Jack Davis, printing paper sales manager, Crown-Zellerbach Paper Co.; John O. Skagen, sales representative, and Paul G. Albrecht, sales supervisor, Kimberly-Clarke Corp.

8—Round table consultation is being conducted here for a serious group by Howard N. King (seated, facing camera), Maple Press, York, Pa.

9—Jack Eddy, jr., Miehle Printing Press & Mfg. Co., Los Angeles, helps Norman Shanks, Globoyloy Metals, Los Angeles, pack one of the prizes awarded by Miehle.

## Record Number of 421 Attend SNPA Conference

The Annual Southern Newspaper Publishers Assoc. Eastern Div. Mechanical Conference, was held at the Dinkler Plaza in Atlanta, Ga., Aug. 19-21. The registered attendance of 421 was the largest in conference history. Chairman of the conference and presiding over the sessions was Earl P. Boyd, composing room foreman of the Montgomery (Ala.) *Advertiser and Journal*. Fred L. Morris, mechanical superintendent of the Augusta (Ga.) *Chronicle and Herald*, served as vice chairman. Serving as acting conference secretary was Grady M. Lemons of the SNPA office in Chattanooga, Tenn.

Election of conference officials resulted as follows: Fred L. Morris, chairman of the 1957 Mechanical Conference; vice chairman, Girt Cochrane, Charleston (W. Va.) *Gazette;* 3 year executive committee members, Warren Schrieffer, New Orleans (La.) *Times-Picayune;* Calvin Thomas, St. Petersburg (Fla.) *Times;* F. L. Furlong, Montgomery (Ala.) *Advertiser and Journal;* and Ed Johnsen, Columbus (Ga.) *Ledger-Enquirer*. Carey Weaver, Atlanta Newspapers, Inc., was elected to fill an unexpired 2 year term.

Selected as the site for the 1957 conference was Birmingham, Ala., with tentative dates set as August 18-20.

# Time System and 3M Process Combine for Makeready Savings

**By ALAN S. HOLLIDAY***

**President, Craftsmen, Incorporated, Kutztown, Pa. From an address delivered before Intl. Craftsmen's Convention, Los Angeles, August 1955.*

The 3M cylinder press makeready system, which Minnesota Mining & Mfg. Co. (developers of the process) claims will save from 30% to 60% in makeready time, has reduced makeready time in our plant, in some cases, from six hours to one hour and 45 minutes. It should be explained, however, to be honest in this report, Craftsmen, Inc., had a very bad makeready time record before adopting this system.

You should first understand something about our plant. It was created by Hughes Corporation, publication printers, New York, N. Y., mainly for the purpose of evaluating and testing supplies, equipment and new methods in the Graphic Arts although production work is handled as well. We operate a complete letterpress plant with press equipment ranging from a Miehle Vertical to a Miehle 2/0.

The company does not conduct any basic research projects (relying on manufacturers to supply this need), but rather we try to evaluate and develop new processes, equipment and supplies used in the Graphic Arts, particularly where it applies to our primary product, trade publications. For the past two years we have worked closely with Minnesota Mining & Mfg. Co. in the development of its 3M makeready process.

The 3M system, briefly, is a mechanical means of correcting inadequacies in plates, type, presses and human action. The main elements in the process consist of a heat-sensitive plastic coated sheet which is hung in the press packing after being treated in a special machine. (A step by step explanation of the process appeared in *Printing Equipment Engineer*, August 1955, p. 68.)

The plastic coated sheet on which the ink is deposited by printing is placed in the exposure unit where the infrared light is reflected on the plastic coating. The ink causes greater heat absorption in the printing areas which creates a swelling, or raising, of these areas in direct proportion to the amount of solid area or tone being exposed.

Now that we had a process, we had to find the best way to use it. Methods of handling the sheet in the exposure unit had to be considered. How to hang it in the packing and where to hang it were among the problems that had to be solved. With the help of a lot of people in and out of our plant we devised the system we now use and which we feel answers our problems.

### Two Hours for 16 Pages

On a 2/0 Miehle on a 16-page black form printing on a machine-coated sheet using the 3M process, we are able to get rolling in two hours in many cases. The maximum time was two hours and 30 minutes; the minimum time was one hour, 40 minutes. Prior to the adoption of this system we were averaging from four to six hours, and in many plants a much longer time was being taken. It has been found that you have to save a minimum of two hours in your makeready time before the process will pay.

In devising the system to handle the 3M process we had to consider what makeready actually was. We finally came to this conclusion: If a press is not down for mechanical reasons, thereby eliminating it as a piece of production equipment, and if work is available for it, then all the time the press is not running is chargeable as makeready time. If we were to try to eliminate as much of this chargeable time as possible, we would have to break down our time into increments, thereby giving us a picture of what was going on during the time the press was idle. Actually, we had a vague idea of what was going on. We knew men were busy, but how much of their time was being spent on any particular phase of the makeready procedure was what we had to know.

### Makeready Time Sheet

As a result of this thinking, we devised a time sheet solely for the makeready operation. We divided the sheet into steps which would correspond to the steps the pressman would take in makeready. Using the number 202, which is our makeready number, we added the following alphabetical designations: *A*, take form off press; *B*, put on new form; *C*, changeover of press; *D*, underlaying of cuts; *E*, change packing; *F*, line-up of form; *G*, makeready; *H*, changes on form after running; *I*, washup, one color to another, same

(*Continued on Page* 67)

**DAILY PRESS REPORT**

FIRST TRICK | SECOND TRICK | THIRD TRICK

Press No..... CLOCK NO..... DATE.....

Name of Pressman.....

Name of Helper.....

| IMPRESSIONS | M. R. | FOR OFFICE USE ONLY: RUN | CHG. | NON-C. | IDLE |
|---|---|---|---|---|---|
| | | | | | |

MAKE READY PROCESS

| CLOCK RECORD | | KIND OF WORK | NAME OF PUBLICATION AND DATE (ONLY ONE JOB IN THIS SECTION) | FORM | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | START | | | FOLIO NO. | | | | | |
| | FINISH | | | | | | | | |
| | START | | | NO. OF PAGES | | | | | |
| | FINISH | | | | | | | | |
| | START | | | COLOR | | | | | |
| | FINISH | | | | | | | | |
| | START | | | | | | | | |
| | FINISH | | | | | | | | |
| | START | | | | | | | | |
| | FINISH | | | | | | | | |
| | START | | | | | | | | |

202A—Taking off form
202B—Putting on new form
*202C—Changeover of press
202D—Underlaying of cuts
202E—Changing packing
202F—Line up of form
202G—Makeready
202H—Changes on form after running
202I —Washup—1 color to another, same job
202J —

*This will include time spent splitting rollers—changing rollers—setting rollers or any other mechanical operation preparatory to running.

Printed time sheet used at Craftsmen, Incorporated, for timing makeready operations in the plant. The sheet is divided for use by pressmen and the production office. Pressmen indicate the starting and finishing time of each individual makeready operation under *Clock Record*. Each operation is listed by code (see key at bottom of form) under *Kind of Work*. The number 202 is the company's makeready number under operational procedure. This information provides the production office with means of knowing how much time was spent on makeready on a particular job, how much time is chargeable, non-chargeable and idle. It also helps to show if any unusual amount of time was spent on any one operation which might be corrected simply by the foreman consulting with the pressman.

# Photon

## *Combination Phototypesetting and Photocomposing Machine Ready for Plant Use*

By SIDNEY JAMES PAINE

Twenty-five production Photon photographic typesetting and composing machines are now in final assembly and test at the plant of Photon, Inc., Cambridge, Mass. These will be placed in commercial use shortly. These machines resulted from field testing of nine earlier Photons. This field testing has been conducted in commercial plants since September, 1954.

Increased versatility and speed; easier mixing of faces, sizes, and arrangements; more automatic positioning controls; ease of operation; and the new Makeup Eliminator Panel are some of the principal features of the production machine. The Makeup Eliminator Panel in the new Photon permits visual control by the operator of both horizontal and vertical locations and spacing of lines, enabling type to be placed in final composed position on film, as indicated by a layout during the keyboard process.

The new Photon machine consists of three units: (1) The typewriter console contains a standard electric typewriter, labeled push buttons and lever controls, copy holder and the Makeup Eliminator Panel. (2) Directly to the left of the operator is a relay rack which contains additional controls for special types of composition. (3) To the rear of the operator is the photographic unit. This U-shaped arrangement permits access by the operator to the keyboard, to the film magazine and to the matrix disc without the operator rising from the chair.

### Getting Ready for Operation

Now let us place you in the position of an operator setting type by photography on Photon. Your first duty would be to insert the film magazine. This magazine is loaded with photographic material of the proper width for the job to be done. (The film magazine is adjustable to handle 10 film widths from approx. 3 in. to 8 in. Each roll of photographic material is 50 ft. long.) Next, you choose a matrix disc which contains the desired fonts of type, and fit it in place in the photographic unit. A matrix disc weighs about 2 lbs. For each disc, select the proper width selector carriage holding built-in selectors for the 16 fonts of type on the matrix disc. This carriage slides into position in the right-hand pedestal of the typing console. These operations can be performed in less than a minute.

Next you place your copy in the copy holder and sit down at a standard typewriter keyboard. To your left are three rows of push buttons for the selection of any line length in inches, tenths of an inch, and hundredths of an inch up to seven inches. (Machines of 54 pica capacity are also available.) Three rows of buttons enable the choice of leading, or vertical movement of film after each line is photographed, in tens of points, single points, and tenths of a point up to 49.9 points in a single automatic operation (which can be repeated if necessary).

Every family, size or style available at the operator's keyboard *may be placed* in the line being composed. *Not only can* type styles be mixed within a line, but point sizes and families may also be mixed without interfering with justification or alignment

*Fig. 1.* — **View of the new 200 series Photon phototypesetting and photocomposing machine. The machine shown in this illustration is equipped with tape perforator and reader.**

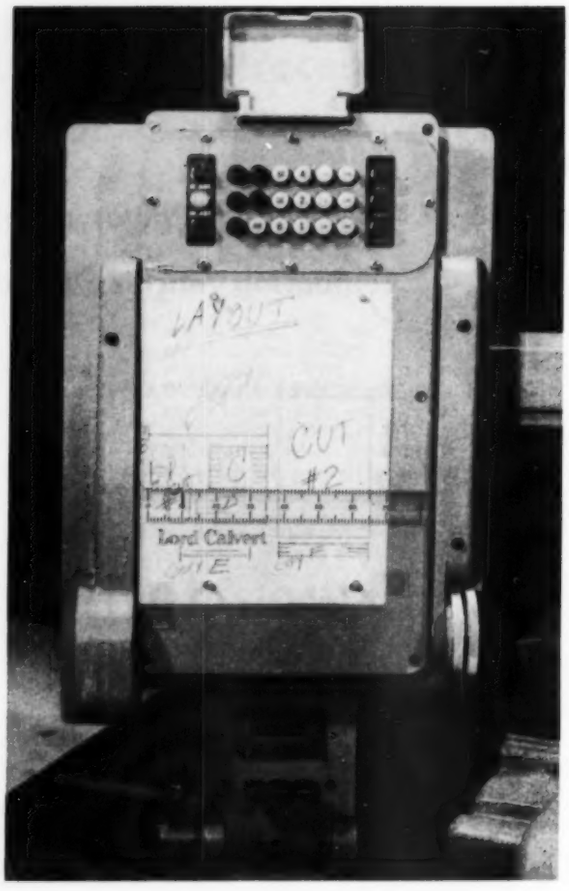



***Fig. 2.*** **– View of Makeup Eliminator Panel which is positioned at left of the typewriter keyboard in the 200 series Photon (Fig. 1). Regular copyboard is mounted directly above the typewriter keyboard. The layout for an advertisement or other composition is placed in the frame as shown. It serves the purpose of a blue print as used in architectural and/or engineering drawings. The transparent scale is scaled in line length units and is moved flush with the first line on the layout. This locates on film the position of the first line to be composed. After each line is set, the film in the film magazine will move the distance pre-selected on the leading controls. As the film moves, the transparent rule on the MEP moves over the layout. Also, as the film moves, either forward or reverse, a counter above these buttons indicates the movement in points. The third push button (at left under counter) permits putting a vertical rule any place desired on the film as the film is moved forward or reverse.**

To your right are two levers: One selects any of the 16 type faces on the matrix disc; the other selects any of the 12 sizes in these type faces (5 to 28 pts. for most faces and up to 42 pts. for condensed faces.) A single matrix disc affords any selection from 192 fonts of type.

### Set Width Flexibility

Should it be desirable to deviate from the standard width spacing of the type face, there are available controls to choose from as many as 80 different set widths adding to or decreasing white space after the characters. Set widths can be changed in smaller sizes by increments as fine as 1/8 set. For special effects which require superimposed characters, a zero set width button is provided.

### Running Corrections

You now start to type your copy. As you type, everything is stored in mechanical and electrical storage systems. Nothing is photographed until the line is completed, all corrections made, and the carriage return key pressed. If you strike a wrong key, depressing the backspace key puts a red slash mark through the erroneous character on the typewriter proof and also removes it from storage. You then keyboard the correct character. If you have finished typing the line and in proofreading see an error, you move the typewriter platen to the error, strike the error key, then keyboard the correct character. Or, if desired, you can depress the kill line button which erases the entire line. The fact that the Photon operator may very easily and quickly correct individual characters from the keyboard before photography, enables the setting of a very high percentage of error-free copy.

### Line Justification

As you approach completion of a line, the Photon machine gives you the first justification signal by means of a light. At this point, the machine advises that the line can be justified and that it will automatically place maximum space compatible with good appearance between words for the type size you are composing and will letterspace the remaining space necessary for justification equally throughout the line.

If you continue to type, the machine will give you a second justification signal, both visual and audible (a light and a gong). This is the signal that the machine can justify the line without letter spacing.

The third signal is a buzzer which warns that you are approaching the minimum allowable interword spacing. If you type too much, the buzzer stops and the keyboard locks. This means that you have overset the line by the width of the last character keyboarded. By holding down the backspace key until you have returned on the typewriter proof to a word-break or to a point of hyphenation, the "overset" is eliminated. After keyboarding the hyphen (if necessary), you then press the carriage return key and the justified line is photographed one character at a time at the rate of 8 per sec. Meanwhile, you immediately start typing the second line while the first one is being photographed.

The possibilities of type positioning through automatic controls on the typewriter console are practically unlimited on the Photon. To center a word or group of words, you type and press the automatic centering push button instead of the carriage return key. The same for flush left lines, non-justified and flush right lines. You make the decision as to location of type on film after you have keyboarded the line.

### Setting Directory Copy

If you are composing directory or other copy requiring leader characters, the selection of character spacing is made before typing. It can be one unit (10 to the in.) or half unit (20 to the in.). You then type the copy and when you come to the place for leaders, press the insert leader key once and type the remainder of the copy. After you press the carriage return key, the machine computes the number of leaders needed to fill the measure. This computation is at the rate of 16 leaders per sec. After the computation, the machine immediately photographs the line, inserting the right number of leaders for justification. If flush left flush right copy is desired with blank space instead of leaders, you push the insert blank key instead of the insert leaders key. Leaders or blank space may be placed in any spacing or in any position manually, if desired.

Fixed space independent of type size is available on the typewriter keyboard using four keys labeled 1 unit (10th of an in.), 1/2, 1/4, and 1/16 units, the latter being 1/160 in. Proportionate space to the type size and style is also available through the em space key and the number space key. This latter key always puts the width of the numeral on the film. Numerals do not necessarily have to be the same width for all alphabets.

### Mixing Type

Another feature of the new Photon machine is that all sizes and styles can be mixed in the line as frequently as desired without affecting justification or alignment and with no limitations. Size change during keyboarding takes about 1 sec. Maximum time for mixing fonts is 1/2 sec. Mixing two fonts that are on the same row of the matrix disc can be done through the use of a foot pedal control and is practically as quick as the cap shift operation on a typewriter. By proper planning of arrangement of type faces on the matrix disc for the kind of work expected, the foot pedal control permits justified mixed composition at full typing speed. Thus it is possible to mix a roman face with italic, bold, or any other face of any width without loss of keyboard speed.

### Makeup Eliminator Panel

The Photon machine may be used to perform the complete composing operation. Both vertical and horizontal locations are always under the operator's control. The operator can make-up a page of advertising directly from the keyboard. This is done by using the Makeup Eliminator Panel (MEP). Before starting to compose an ad, or other form, the layout is placed on the MEP and the transparent rule, which is scaled in line length units, is moved flush with the first line on the layout. This locates on film the place for the first line to be composed.

After each line is set, the film in the film magazine will move the distance pre-selected on the leading controls. As the film moves, the rule moves down over the layout on the MEP. Thus, the operator knows where the type is being placed on film by following the MEP rule. If the spaces on the layout between lines or blocks of copy should be different from the pre-selected leading, the operator can move the rule by striking the forward or reverse push buttons on the base of the MEP, and thus move the film in the film magazine. As the film moves, either forward or reverse, a counter above these buttons indicates the movement in points. For horizontal positioning, the operator follows the line length unit scale on the rule. The third push button at the base of the MEP enables you to put a vertical rule any place desired on the film as the film is moved either forward or reverse.

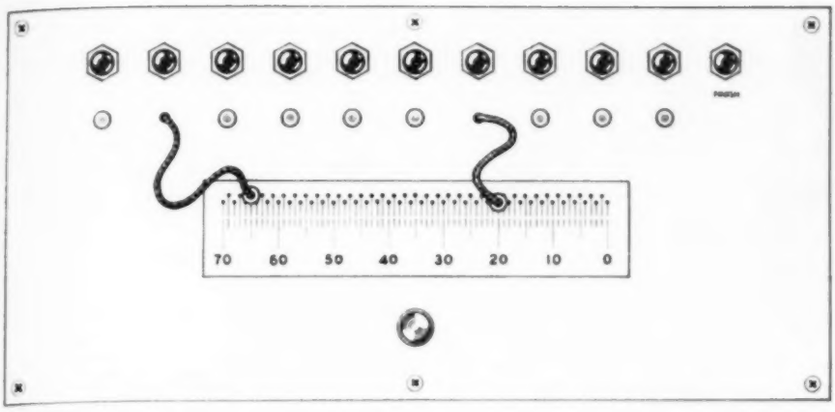



*Fig. 3.* – **In ordinary tabular composition, where the numerals are the same set width, the operator would use the tab keys on the standard typewriter keyboard shown in Fig. 1. However, if the tabular work contains characters of different widths, Photon's Counter Control Tabulator would be used. In this diagrammatic representation of a Counter Control Tabulator, the scale is graduated in units of 1/10 in. up to 7 in. At each 1/10 in. graduation there is a hole. To set the tab stops, plugs are put into the holes where desired. In this diagram, two of the plugs have been pulled out from normal position and have been inserted in the holes above 2 in. and 6 1/2 in. After typing the copy to be contained in the first tabular space, the control button is depressed, the copy for the second tabular space is typed, the control button is struck, and so on for each individual column. At the end of the line the carriage return key is pressed and the second line is started. The machine does the calculating and places the type where the operator has indicated on the Counter Control Tabulator.**

**COUNTER CONTROL TABULATOR**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| I | am | ready | I | will | go | I | have | gone |
| You | are | ready | You | will | go | You | have | gone |
| He | is | ready | He | will | go | He | has | gone |
| We | are | ready | We | will | go | We | have | gone |
| You | are | ready | You | will | go | You | have | gone |
| They | are | ready | They | will | go | They | have | gone |

### Complicated Composition

If complicated composition is desired, other controls are available on the Photon. Tabular matter can be composed by using the typewriter tab keys or by using the Counter Control Tabulator, a special accessory positioned on the relay rack. The tab keys on the typewriter would be used mostly for tabular work containing characters of the same widths, such as numerals. If you were doing this sort of work and wished the period, the dollar sign, the dagger, etc., to have the same width of the numeral, you would press the number width push button. Once this button is depressed, anything keyboarded will automatically be photographed on the same amount of white space as the numeral. If your tabular work contains characters of different widths, you would use the Counter Control Tabulator. Here you see a scale marked off in units of a 10th of an inch up to 7 in. At each 10th of an inch separation, there is a hole. To set up your tab stops, you put plugs into these holes where desired. After typing the copy to be contained in the first tabular space, you push the control button, type the copy for the second tabular space, push the button, etc. At the end of the line, press the carriage return key and start the second line. The machine does the calculation and places the type where the operator has indicated in the Counter Control Tabulator.

For other special positioning of type in the line, the operator may use the group of numbered lights on top of the MEP. If you set the line length at say 4 in., the lights will add up to 40; that is, 40 units each being a 10th of an inch. As you type, indent, or tab across the line, the lights will change and reduce in total value, telling you how much space is left in the line. Thus the operator has full control of horizontal positioning of any character or group of characters.

### Multiple Column Composition

Other controls for special positioning are available. The multiple justification push button may be used for setting copy calling for justified lines in mulitple columns. To compose this material, we change the line length buttons to the width of the individual column, type the copy and before pressing the carriage return key at the end of each column, push the multiple justification button. This is done in each instance except for the last column where only the carriage return key is pressed. Besides justifying copy, it is possible to do automatically non-justified or flush left, flush right or centered copy within each column width.

A zero-lead button allows the superimposition or double exposure of one or more additional lines directly on top of the first. A line with centered copy may thus be combined with a flush left-right line, like this:

**LEFT CENTER RIGHT**

You may "rule through" part of a line, using the zero-lead button, for example, in ad work:

**Formerly ~~7.95~~ NOW ONLY $5**

Or, again, in grammar books:

**WRONG: We ~~was~~ here.**
**RIGHT: We were here.**

Or, math books:

$$\frac{\overset{2}{\cancel{8}\cdot 2}}{\underset{1}{\cancel{4}}} = 4$$

From the typewriter keyboard, it is also possible to leave space for the width of any character or group of characters on film but not photograph at that time. This is useful for large initial letters or for certain kinds of advertising copy. For a single character, the operator presses the no flash button while keyboarding the character. For a group of characters, the operator would use the locking non-photo push button.

### Counter and Register

The mechanical storage system and the electrical storage system can be turned on and off at will by the operator. In other words, if the counter off button is struck, the machine will register individual character image codes but not individual character width codes. If the register off button is pushed, the machine will store the codes for character widths but not for character images.

One feature of the counter and register push buttons is for quick spot positioning of type by the operator. Examine the following layout:

| CHAPTER TITLE | PAGE NUMBER |
|---|---|
| Old Problems | 1 |
| A New Idea | 17 |

In placing the "P" of PAGE directly above the "N" of NUMBER, you could use the spot justification technique.

Another use of these buttons is for fast and accurate line length calculation. Wherever the length of the longest line of type of a particular font will determine the overall dimensions of the layout, you may find the exact line length required with the aid of the register and counter buttons.

### Changing Leading

To change leading between characters or words, the operator can use the unit lead push button to the left of the typewriter. Each time this push button is used, a signal is given the machine to move the film 1 pt. at a specified place while the line is being photographed. In other words, the operator can change the leading not only between lines but within the line itself and leading can be changed both forward and reverse.

### The Photographic Unit

Now let us look at the photographic unit and see what happens after one line has been typed and the carriage return key pressed.

Inside the photographic unit to the rear of the operator is the glass matrix disc containing 16 fonts of type. This disc is revolving 8 times

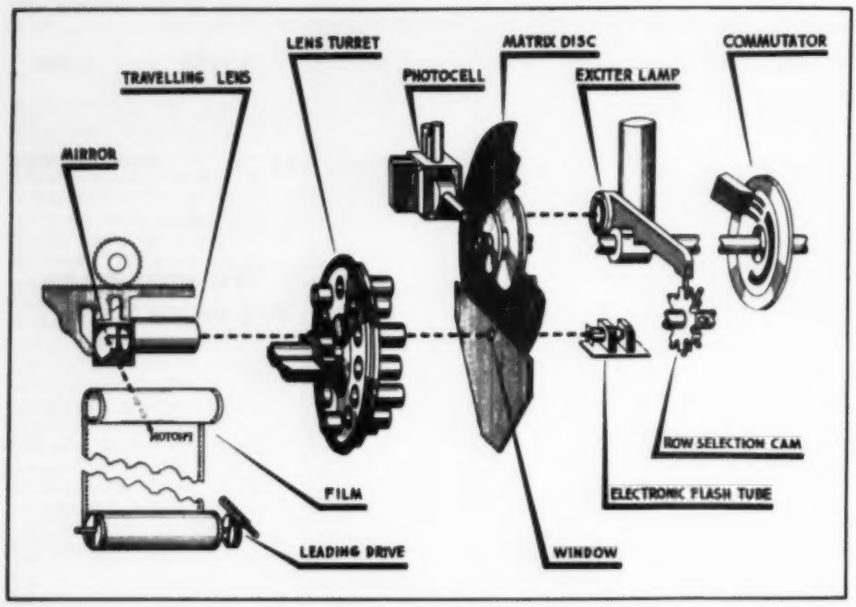



*Fig. 4.* – **Optical system of the 200 series Photon phototypesetting and photocomposing machine. The whirling 2 lb. glass Matrix Disc shown at right of center, bears 16 type fonts. Together with the 12 lenses in the turret, 192 fonts (90 characters per font) are available to the operator.**

**TO**
**get**
**perfectly**
**centered lines**
**you simply *type* the copy**
**and**
**press the CENTER button.**

| | | |
|---|---|---|
| **A Photon operates at speeds up to 10 characters per sec.** | **A Photon operates at speeds up to 10 characters per sec.** | **A Photon operates at speeds up to 10 characters per sec.** |
| **You these on** | **can words the** | **set quickly Photon.** |
| **blank space** | **wide . . . . . dots** | **narrow .....dots** |

per sec. To put type on film, a stroboscopic light flashes once per revolution each time projecting through a chosen character on the disc. The image of the character then goes through a chosen one of the 12 lenses in the lens turret which is in front of the disc. After the image has passed through the lens turret, it is reflected at 90 deg. by a prism and is placed on film. This prism moves after each character is photographed the exact space required for the width of the character and justifying space, if any. Although the disc is revolving 8 times per sec., the speed of the strobe flash is so great (about 4 millionths of a second) that it prevents any blur of the characters on film.

### Tape Units May Be Used

The Photon machine is also available with tape units. Perforated tape can be produced from the Photon keyboard. This can be done either at the same time type is being set on film or as an independent operation for later photography. It is possible to correct individual characters on tape from the keyboard because the tape is not perforated until after the line has been keyboarded, proof read, the individual characters corrected, and the carriage return key pressed.

After reading a proof of the film which was composed as the tape was perforated, author's corrections, etc., can be put on tape, the original tape cut, and the new tape spliced in. The composite tape is then run through the Photon to get corrected film. Tape can be run through the Photon machine at speed of 10 characters per sec. Other kinds of tape such as TTS, Justowriter, Flexowriter, etc., may also be run through the Photon machine. One Photon could handle in one shift these tapes which were perforated on three other keyboards.

### Film Line Eliminator

Besides the Photon Precision Shear and Vacuum Light Table for accurate hand stripping for use in correcting film, Photon has developed a motor driven line-eliminator which peels the emulsion of an unwanted line off the film surface. The film containing a correction line does not have to be accurately cut. The two pieces of film or for that matter, up to 8 thicknesses of film, are placed in a precision 1-to-1 Camera, in accurate position and photographed. The result is a corrected negative. The placement of the film in the camera (emulsion up or down) determines whether the negative is suitable for offset or photoengraving.

## EDITOR'S NOTE

**This article was set on the Photon 200 series photographic typesetting and composing machine. It was printed from Dow rapid-etch magnesium plates produced by the Wright Company, Cambridge, Mass.**

## G. A. Technical Option Open at Carnegie Tech

Whether the Graphic Arts field has invaded the engineering field or vice versa is a moot question. The fact that industry is more and more demanding in its desire for all-around graduates is now almost an established fact and this fact is illustrated by the announcement that the School of Printing Management at Carnegie Institute of Technology is offering, in addition to the regular curriculums, a new four-year program titled, *Graphic Arts Technical Option*.

The curriculum, developed in cooperation with the Research and Engineering Council, came into being as a result of the printing industry's greater use of engineering principles and the coordinate lessening of the craft procedures.

Glen U. Cleeton, dean of the Carnegie Tech School of Printing Management, says the course will prepare students for positions involving the application of scientific principles and analytic techniques to Graphic Arts production and development problems.

"We have, in recent years, had a tremendous demand for graduates thus trained. Employers in the field, especially in the equipment servicing and paper industry, are now seeking, before any other graduates, students trained for positions requiring ability to work in areas of technological advancement of Graphic Arts processes," Cleeton said. A B.S. degree in Printing Management is awarded.

## Celebrates 500 Years Of Progress Through Printing

An executive committee made up of spokesmen for the Graphic Arts industry, labor and related groups, has been formed to sponsor the commemoration in October of the 500th anniversary of printing's origin.

GOGER

This announcement was made by Milton J. Goger, president of American Type Founders Co., Inc., and chairman of the newly-formed committee. Other members of the committee include: William Dwight, president, American Newspaper Publishers Assoc.; Robert D. Holbrook, chairman of the board, American Assoc. of Advertising Agencies; David L. Luke, jr., president, American Paper and Pulp Assoc. and George Meany, president, AFL-CIO.

In addition, a special Graphic Arts division of the committee includes: Walter T. Armstrong, sr., president, Advertising Typographers Assoc.; Harold R. Dantuma, president, International Typographic Composition Assoc.; Rex G. Howard, president, National Assoc. of Photo Lithographers; J. R. Jackman, president, Printing Industry of America, Inc.; Carl N. Reed, president, Lithographers National Assoc.; R. C. Walker, president, American Photo Engravers Assoc., and George Wise, president, National Assoc. of Printing House Craftsmen, Inc.

The five hundred year anniversary dates back to the completion of the 42-line Gutenberg bible in 1456, the first established date for the completion of a manuscript through the use of movable type.

Among the activities scheduled for the commemoration of the anniversary is a special newspaper supplement that will be made available to every newspaper in the nation for use as an added feature during Newspaper Week, October 1-8. Included in the supplement will be articles and features depicting the history and growth of the Graphic Arts industry and illustrating the vital importance of printing to our democratic way of life, our prosperity and our civilization.

An open letter from President Eisenhower, addressed to the sponsoring committee, will appear in the supplement.

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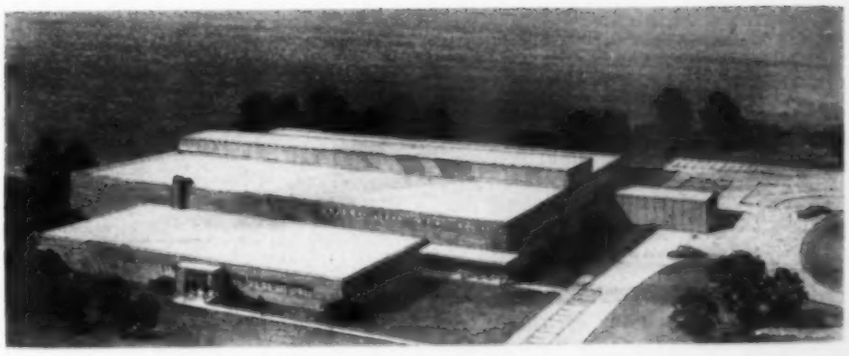
Pass along to your fellow readers any production ideas devised in your plant. They'll appreciate it.

**NCR (No Carbon Required) Paper,** which provides multiple copies of business forms without the use of carbon, is now available to printers in sheets as well as in rolls, it is announced by the Special Products Dept., The National Cash Register Co. Sheet stock in both bond and ledger grades will be handled by paper merchants throughout the country. The NCR Paper in rolls will be distributed by The National Cash Register Co. NCR paper has been used in the manufacture of many types of business forms, including invoices, purchase orders, shipping records, bills of lading, sales checks and others. Multiple copies are possible by chemical coatings which are applied to the paper surface at the paper mill. In a business form containing an original and two copies, for example, the underside of the top sheet is treated with one of the two coatings used in the process. The topside of the next sheet is coated with the other material. When a typewriter or pencil makes an impression on the first sheet, the two coatings are pressed together, producing a color reaction at the point of contact. Production of six legible copies is claimed, and more than eight copies if an electric typewriter is used. NCR Paper is manufactured in three types: CB (coated back), CF (coated front), and CFB (coated front and back). Shown in the illustration are personnel of The National Cash Register Co. inspecting CB No Carbon Required Paper. For further details, please mention PEE No. 142 in your request.

**Our Sunday Visitor, a Roman Catholic weekly publication with a circulation of 1 million copies, recently installed this Original Heidelberg Platen Press. It is published in Huntington, Ind. John F. Wolters, plant superintendent, (left), and the Most Reverend John F. Knoll, Archbishop of the Ft. Wayne, Ind., *Diety*, are shown next to the new unit. The press will be used for printing envelopes, pamphlets, collection boxes, letterheads, and similar work. Wolters says.**



**Erects 76,000 Sq. Ft. Plant**—A new plant with approx. 76,000 sq. ft. of space is being erected by Paper Converting Machine Co. The building is on a 16 A. site south of Green Bay, Wis. Shop space of 54,500 sq. ft. is provided and the remaining 21,500 sq. ft. will be general offices and engineering. The building will be provided with demountable growth walls. Only one wall is considered permanent and the others can be moved. Walls are equipped with precast concrete panels forming the lower 9 ft., with insulated metal panels fastened to the skeleton frame forming the upper portion. Other features include: Concrete and wood block floors in the machine area, steel roof deck with insulation and vapor barrier, floor trenches to provide 110 to 550 v. electrical service, compressed air, water and vacuum discharge. Exterior of offices will be native Sturgeon Bay stone. Office building will be air conditioned and decorated with acoustical tile and plaster. Lighting will be provided by recessed fluorescent fixtures. The company expects to move late in 1956.

## Hawaiian Craftsmen Entertain Mainland Visitors

It was a gala event during the night of Saturday, August 18 in Honolulu, Hawaii, when 23 Craftsmen and 26 ladies from the mainland were guests at the twentieth anniversary meeting of the Honolulu Club of Printing House Craftsmen. Importance of the event was added to by the presence of International officers. These were International President George Wise, Cleveland; Immediate Past President Amadeo R. Tommasini, San Francisco, Calif., and Past President Howard N. King, York, Pa. Including the Honolulu Craftsmen and their ladies, approx. 250 people attended the ladies' night meeting at the Long House, Hawaiian Village, Waikiki.

Left to right at the speakers' table (left side of table) were: Mrs. Donald O. Brosseau and Donald O. Brosseau, first vice president, Honolulu Club; Mrs. Virginia Wise and George Wise, newly elected Intl. president; Mrs. Larry Smith and Larry Smith, new president of Honolulu Club.

(Left to right, right side of speakers' table) Russell S. Quaintance, outgoing president of Honolulu Club and Mrs. Quaintance; Amadeo R. (Tommy) Tommasini, immediate past Intl. president and Mrs. Tommasini; Mrs. Howard N. King, York, Pa., and Howard N. King, past Intl. president, York, Pa. King, typographic counsellor, Intertype Corporation, also spoke before the Honolulu Advertising Club on Wednesday noon, August 22.

# Flexographic Printing

By MR. FLEXOGRAPHY

### III.—Testing the Print

Every printer should set up his own standards and methods of testing in direct ratio to the degree of need. Check from the summary below just which tests you require in *your* plant.

*Color*—The sample print may be butted to your standard and observed through a hollow tube in daylight. Careful attention msut be given to the background color or supporting area color of the samples as all colors are influenced by neighboring colors. This influence must be identical for both standard and sample—particularly for prints on transparent or translucent stocks. More accurate measurement, if desired, may be obtained with the use of a spectrophotometer, several of which this column can recommend upon request.

*Adhesion* — The use of Scotch tape is the most popular. Equal emphasis should be given to hand wrinkling and scratching with a fingernail across the ink film. All adhesion tests are effective only after an hour has elapsed from the time the ink film was applied. Additional tests should be made at 24, 48 and 72 hours after printing.

*Rub and Scratch Resistance*—In addition to hand rubbing with paper or dampened cloth, there are instruments available to measure accurately the number of rubs and the amount of pressure required to remove an ink film.

*Light Resistance*—Specimens are exposed to ultraviolet light and checked periodically for fading or color change.

*Blocking Resistance*—Place three samples together: (1) Print to print; (2) Printed area to plain area; (3) Plain area to plain area. Leave a 1 lb. weight per sq. in. on each sample for 24 hrs. at 110 deg. F. If blocking persists, check for trapped solvent in the ink film and the solvent release rate of the resins in the ink. (This test was discusssed in the Aug. issue of *Printing Equipment Engineer.*)

*Gloss*—There are several instruments designed for gloss measurement. Most use the principle of measured light reflection.

*Flexibility*—Prints may be hand wrinkled and the amount of flaking noted or they may be mechanically flexed by a creasing device which records the number of flexes.

*Heat Resistance*—Sample prints are subjected to increased temper-

### EDITOR'S NOTE

This is the third in a series of articles by a printing consultant to flexographic printers. Your own printing problems will be answered by writing to Mr. Flexography, in care of Editor, *Printing Equipment Engineer*, 1276 West Third St., Cleveland 13.

# The New Equipment Problem

## In the Commercial Printing Field

By J. W. ROCKEFELLER, Jr.*
*J. W. Rockefeller, Jr., and Associates, Millburn, N. J.*

### PART II.—WHEN IT'S TIME TO MOVE FAST

In the previous article of this series was stressed the importance of regarding the printing plant as a whole and each individual piece of equipment simply as part of that entity. Without departing from this general principle, it must be admitted there are times when prompt remedial action is so necessary that a small expenditure on a single piece of equipment can be made profitably without giving too much thought to the general long range plans so essential to the ultimate success of any comprehensive equipment programme.

In general, equipment may be replaced for one of two reasons, viz:

1. Design
2. Condition

Under the head of design would come the consideration of the equipment as part of the general production picture. Regardless of its individual merits considered against this background, it might not be the right machine for the job. The second consideration, that of condition, does not take into account the design or the general appropriateness of the individual machine as part of the production picture, but only whether it is capable of doing satisfactorily the job for which it was built. If it does not, it may be costing the company utilizing it many times its original purchase price in sub-standard operation and spoiled work.

The proverb that a poor workman blames his tools has probably been responsible for more damage and

atures and periodic notations are made of any ink film change.

*Odor*—Prints are heated moderately in a sealed container for extended periods. Upon opening for inspection, immediate appraisal must be made for odor character.

*Water Resistance*—Make a sandwich using small samples of print and filter papers. Immerse into water and check at predetermined intervals for adhesion, blending, or any other changes.

*Chemical Resistance* — Inks can be formulated to resist *soap, alkali, alcohol, food fats* such as butter, oleo, lard, etc., bake mixes, crackers, cookies, potato chips, soup mixes, ice cream, candy and a host of other products that demand special requirements. Such specifications are spelled out in detail and consultation with your ink supplier is necessary.

All tests are made with a view of obtaining comparative results. The decision to use a new ink depends upon how closely the new ink approximates your standard. Naturally, test results must be filed for future reference if we are to realize the full return on the time invested.

In the next issue will be outlined a master control procedure designed to govern one of the printer's most serious problems: How to maintain a uniformity of print from run to run.

**Fly To Honolulu**—Arriving in Honolulu from Los Angeles on the morning of August 17 these Craftsmen and their ladies were greeted by Honolulu Club Craftsmen and ladies. Trip was made immediately following adjournment of Los Angeles Intl. Convention at Biltmore Hotel. Forty-nine Craftsmen and ladies made the trip in several flights. Those shown here, first row, left to right, are: Mrs. Ida Fisher, ladies' coordinator, Los Angeles convention; Reaugh Fisher, general convention chairman; Mrs. MacD. Sinclair, Cleveland; Mrs. Robert M. Edgar, Pittsburgh; Mrs. Virginia Wise, Cleveland; George Wise, newly elected Intl. president; Mrs. Carl Kratovel, Pittsburgh; Mrs. A. R. Tommasini and A. R. (Tommy) Tommasini, immediate past Intl. president.

Standing, left to right on stairway, Carl Kratovel, Pittsburgh; MacD. Sinclair, Cleveland; R. M. Edgar, Pittsburgh, 1957 Printing Week chairman.

In addition to the people identified above, those making the Honolulu trip were: (with their wives) Lee Augustine, Cincinnati, O.; Edward Bovee, Adirondack, N. Y.; Albert Davenport and Harold S. Lyle, Philadelphia; Lee W. Gillespie, Chicago; Robert Kerr, J. Desmond Mulhall and Larry McCullon, Los Angeles; Fred Gross and Paul Hart, San Francisco, Calif.; Paul Hendrickson, Howard King and Lorenzo A. Graveline, York, Pa.; Horace Moisan, Montreal, Can.; Edgar Shapiro, Baltimore, Md.; Walter Soderstrom, New York, N. Y.

Also making the trip were: Hans E. Bengtzen, Salt Lake City, Utah; Eddy Varin, Montreal, Can.; Mrs. Edwin, Ann and Edward Tiemeyer, Chicago.

loss of profits in the printing plant than any other 10 quotations which might be culled from the 1266 pages of Bartlett. It seems to be at the base of a code which frequently prevents the operator from calling management's attention to the fact that a machine is worn out and should be repaired or replaced. Even where the workman possesses the knowledge to trace the cause of his quantitative and qualitative troubles to the condition of the machine he operates and the courage to report this fact to management, such intelligence is frequently ignored. When this happens, the universal panacea is almost inveriably applied. The machine is slowed down.

In our publication, *Report on the Printing Industry*, published in 1946, it was pointed out that slowing down a printing press seldom results in less trouble per 1000 impressions, or an improvement in quality. It results, most assuredly, in less trouble per running hour and this change in itself affords some welcome relief to the operative.

Instances of the waste of time and material by machinery in poor operating condition are numerous. For the sake of example, let us select the case of a sheet fed perforating machine used daily for perforating business forms. The perforating operation came after multicolor lithographing of sheets so that spoilage at this point not only wasted stock but also the expense of lithography going before it.

One of the best places in which to determine the condition of equipment is not at the site of the equipment itself, but at the inspection table where faulty operations are reflected in spoiled work. In the instance that we have chosen, bad perforating accounted for almost 50% of all spoiled work up to that point. An examination of the perforating machines revealed such trouble as worn out pinch roller bearings and rocker arm wear in bearing and stud, causing the perforator wheels to appear lop-sided, with the tendency to pull the sheet to one side. There was little evidence that the machines had received more than the scantiest maintenance over the 30 years during which they had been in operation. In addition to the high spoilage for which the machines were responsible, there had been another bit of evidence which should have indicated to management that something was wrong indeed. The machines had been operating at about half speed, the beginning of a vicious circle. About the only action which the high rate of spoilage had inspired was the admonition by management to the bindery that perforating was bad and that more care would have to be exercised in this operation. Unfortunately, this suggested but one course of action to the bindery, namely, slowing down the speed of the machines. Since the slower speed of operation naturally did not offset the poor mechanical condition of the equipment, no gain was actually made. When it was reported that perforation was still coming through badly, the machines were slowed down still further.

At the time this condition came to our notice, the machines were running at about half their rated speed and producing about five times the amount of spoilage, which might normally be expected. It was estimated that either by putting the machines in good operating condition or by purchasing new machines of the same make and design, the amount of the cash outlay necessary could be more than recovered in one year. It even appeared probable that with the spoilage reduction attainable through improved perforating and a few minor changes, the inspection at this point might be discontinued completely and the outlay for perforator replacement or improvement recovered in a matter of months, or even weeks.

Replacement of equipment because of its poor operating condition may be such an urgent need as to transcend long range plans and call for immediate action. The case cited was certainly such an example, and not a completely isolated one.

Perhaps half the printing plants in the industry are operating machinery which is limping along at half speed, spoiling a great deal of work and between the two costing the company many times the price of correcting it, whether such correction amounts to simply a new bushing or an entire new machine. It is possible to walk past such machinery every day in the year, and not be aware of its condition. It is even possible for the operator in charge to be ignorant of the cause of his trouble or indeed the trouble itself.

There are two places, however, where poor condition of equipment can usually be spotted. One is at the point of inspection of the product of the equipment and the other in the daily tabulation of production, or, better still, the mechanically transcribed record of the machine operation. A rise in spoiled work or a drop in the running speed of the machine warrants immediate investigation.

In spite of the many instances where a small sum spent for repairs or purchase of replacement equipment appear justified, this is not the answer to the printer's problem. The error is more frequently in the opposite direction, and is likely to remain so until the general economy of our country shows a marked change in trend.

Because business has recently enjoyed a prosperity never before equalled in its history, there has been a tendency on the part of printers, as well as others, to be satisfied and to avoid risking any marked change in the materials and methods of production. There have been exceptions to this general rule. Some in the field have gambled with new designs of equipment and new methods and their rewards have frequently been a reduction in manufacturing costs of from 20% to 50%.

These exceptions have been so few and the general market for printed products so good, that it has been possible for them to retain most of the savings effected, passing but a nominal share along to the customer. A profit before taxes of 20% or more on gross sales is not at all unusual among them. In the eyes of the average printer, producing in the same manner and on virtually the same equipment as he did 20 years ago, this profit may appear fantastic.

As a matter of melancholy fact, the lot of the average commercial printer is even worse than he realizes or admits. The equipment of unimproved design that he is operating is usually showing no profit at all. What the black figure on his books, at the end of the fiscal year is too likely to represent is the markup on materials paper and ink that go into the end product sold to his customer. He has operated this outmoded equipment for the purpose of making a profit on the merchandising of a few hundred tons of paper and a few hundred pounds of ink. Keeping it in good operating condition, is however, hardly the answer to his problem.

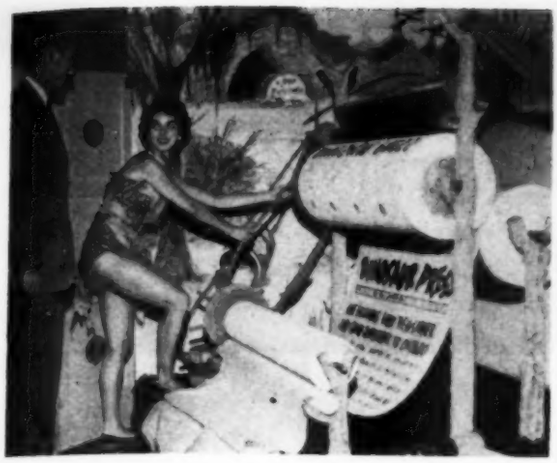
He may be wasting time in repairing the harness of an old draft horse or even buying a new one, when what he really needs is a tractor.

*(To Be Continued)*

## Blattenberger Speaks

Raymond Blattenberger, public printer of the United States, will be the keynote speaker at the printing and publishing sessions of the 44th National Safety Congress and Exposition in Chicago, Oct. 22-26.

Other speakers scheduled to address the printing meeting on Thursday, Oct. 25 are: Richard L. Siegel, vice president, industrial and public relations, Gardner Board & Carton Co., Chicago; Dr. Hedwig Kuhn, of the Kuhn Clinic, Hammond, Ind.; and John Redpath, executive vice president, Chicago Carton Co. Both of the printing sessions will be held in the Conrad Hilton hotel.



**She Welcomes Newspaper Color Conferees**—A welcome to newspaper and advertising representatives who attended last month's ROP color conference at Chicago is extended here by "Miss Oola", society editor of R. Hoe & Co.'s *Dinosaur* Press. The press was unveiled in New York at a Hoe press reception. The interested onlooker is *Printing Equipment Engineer's* Paul B. Holder.

### Combination-etch Process Developed by Dow Chemical

A method of etching halftones and line copy on the same magnesium plate was announced recently by The Dow Chemical Co. The combination-etch process, developed by Dow after research in cooperation with the American Newspaper Publishers Assoc. Research Institute, Inc., is a new aspect of the Dow-Etch process.

For newspapers, the development means timelier news-photo coverage for any one edition.

The technique is effected by first etching the magnesium combination plates to a depth of about 0.016 in. in a new combination bath. Then the plates are deep-etched in a conventional Dow Deep-Etch bath. This brings open areas of the combination plate down to 0.025 in. to 0.035 in. The combination etch technique can be used for ordinary halftone or line etching as well as combination etching.

According to Dow, proper etching technique in a balanced bath will produce a plate with greater consistency of etch quality, including virtually no undercutting in halftones. Also claimed is reasonably smooth etch in open areas.

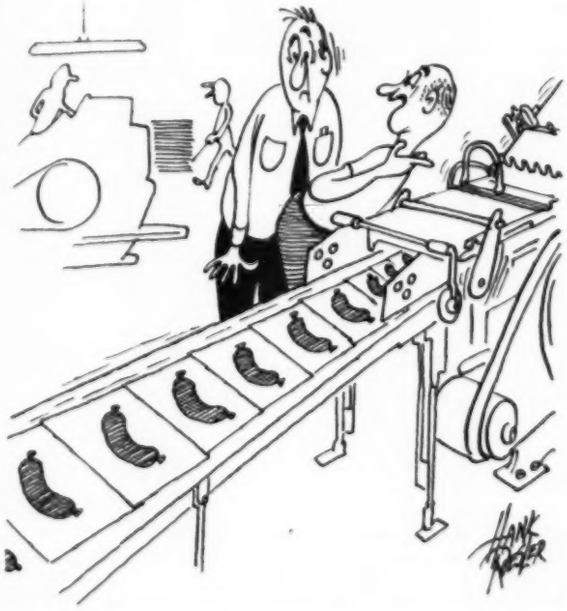
The combination technique is intended primarily for coarse 65-85 screen newspaper type combinations, Dow magnesium research engineers said. They added the process may not yet be entirely suited to some of the fine screen combination copy now being engraved by commercial shops. Dow is continuing research efforts in that direction.

### Trains Monotype Operators

The Monotype School, operated by Lanston Monotype Machine Co. to train Monotype operators, has released the results of an analysis of data on students attending since January 1 of this year.

For the first eight months of 1956, a total of 74 students attended the school. Forty-three were sponsored by customers, and a total of 20 veterans attended the school under the veterans' educational benefits program. Fifty-six students attended the keyboard course, the caster course and a combination which includes both. The remainder have taken shorter courses in type and rule caster, material maker, giant caster, the Monotype-Thompson, or special technical and mechanical courses.

Inquiries regarding the school should be addressed to Monotype School, Lanston Monotype Machine Co., 24th and Locust Sts., Philadelphia 3, Pa.



"I lost my hot dog sandwich in there somewhere."

### INO Holds Seminars

The Institute of Newspaper Operations, Inc. will hold its combined management seminar on stereotype and pressroom operations in the Statler Hotel, New York, N. Y., Oct. 29 through Nov. 2. The stereotype section will be under direction of Robert Hayzlett, INO staff industrial engineer, formerly with the San Diego (Calif.) *Union-Tribune* and the pressroom operations portion will be under A. G. Schnitzer of the Los Angeles (Calif.) *Times-Mirror*. The seminars include basic material organized for the newspaper executive's understanding of press and stereo operations.

Requests for seminar information should be directed to The Institute of Newspaper Operations, Inc., 140 S. Dearborn St., Chicago 3. Registration deadline is Oct. 15.

### Harris Chemical Sales Merged

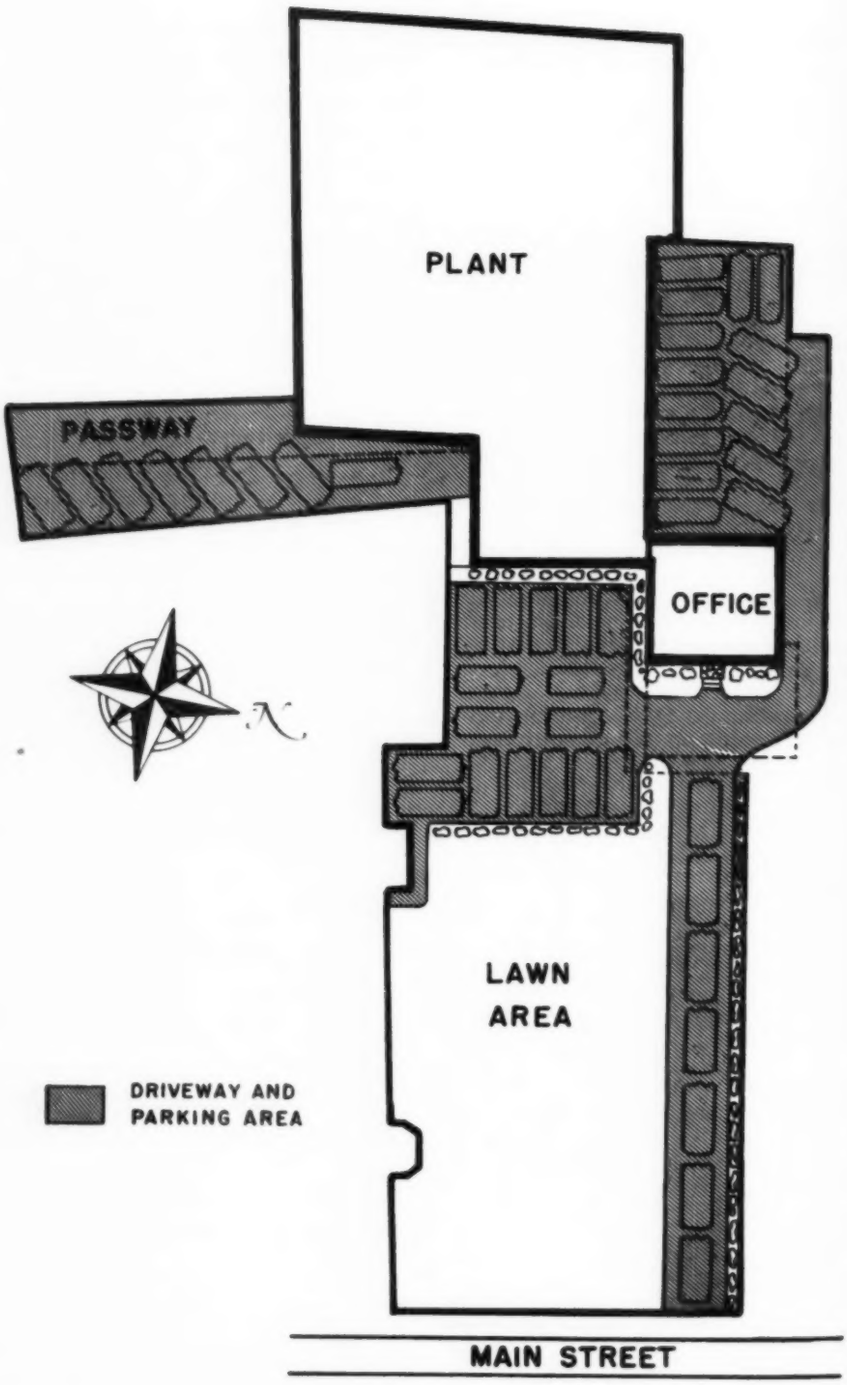
Sales operations and personnel of the Harris Chemical Div., Harris-Seybold Co., have been integrated with Lithoplate, Incorporated, a subsidiary of Harris-Seybold. Announcement was made jointly by Elmer F. Deal, president of Lithoplate, and Joseph W. Powell, jr., vice president of finance of Harris-Seybold and board chairman of Lithoplate. Lithoplate is now sole distributor of all products manufactured by Harris Chemical Div. In line with this expansion policy, Bert Menne, vice president in charge of sales for Lithoplate, announced a new Lithoplate warehouse was recently opened in Richmond, Va.

### Gravure One Day Forum

The Gravure Technical Assoc. will hold its One-Day Forum at Chicago's Sherman Hotel, October 25. The Forum will begin with the showing of a film followed by a talk on the development of proofing presses by Philip C. Simone, manager of the engraving division of Curtis Publishing Co., and a panel discussion concerning proofing presses for gravure cylinders, press manufacturers versus engravers and printers.

## Capital Offset Co.
## Concord, N. H.

The Colonial design exterior of the new one-story plant of Capital Offset Co. covers a modern printing plant on the inside. The office section of the plant is of brick and cinder block construction, built on the granite foundation of a former building. But history stops with the foundation. An air conditioning system has been installed. The offices are finished in pastel colors, most are equipped with modern steel office furniture. Recessed lighting and tile flooring are used attractively in the building. The production building has approx. 10,000 sq. ft. of floor space in a brick construction structure, tar and gravel roof, and a cement floor. The ceiling is dropped from the roof rafters and insulated above. All walls and ceilings are strapped, metal lathed and plastered; walls are painted green. A sprinkler system has been installed through the whole area. Lighting is designed so that plug-in type fixtures can be added or taken away as needed. Power lines have been planned so that machinery can be added without costly rewiring. Compressed air lines are easily accessible. The lavatories have enameled aluminum tile and painted plaster walls with Colorundum cement floors. At the shipping and receiving entrance a hydraulic lift was installed to facilitate the handling of heavy paper stock. The plant is heated with a separate warm air conditioning unit with humidity control. There are paved parking areas for both customers and employees as can be seen in the accompanying plot plan. General contractor on the job was the firm of James Ross Associates, Inc., Concord, N. H.



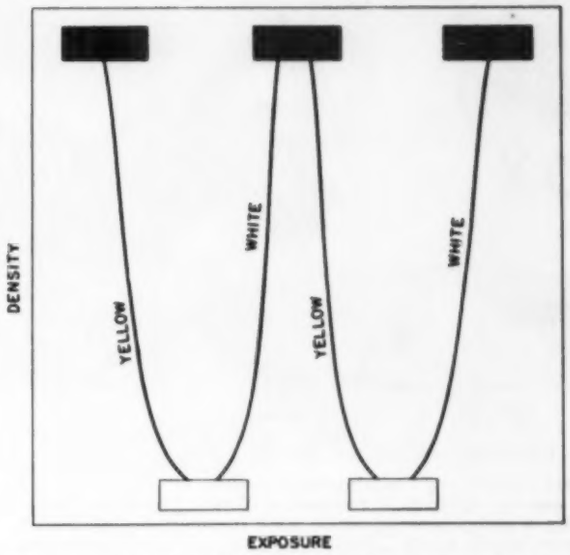



*Fig. 1. — Autopositive Film, when exposed to a white light, will produce a latent image which can be erased by an exposure of yellow light. In some emulsions, this effect is reversible for several cycles, as shown here.*

# Autopositive Film:
## Aid for Making Composite Negatives

By C. WESTON SIMONDS and EDWARD H. GROET*

**Film Testing Division, Eastman Kodak Co., Rochester, N. Y.* *(This is one of 18 papers given at the annual meeting of the Technical Assoc. of the Graphic Arts, May, 1956, and is reproduced here by permission of TAGA.)*

Many photographic products produce higher density with more exposure. These are negative working materials. There is another group of photographic products which is positive working—these materials produce less density with greater exposure. Perhaps the most common of these are the reversal-type films. In these, the original exposed image is developed and made inactive. Then the remaining silver halide is exposed and processed to produce a positive. Familiar examples of reversal-type films are the amateur movie films and slides.

There is, however, another group of less familiar positive working materials with which we are concerned here. They are completely fogged (exposed) during manufacture. If they are then developed by the user before further exposure, they will produce a high density. A peculiarity of these products is that exposure to yellow light erases the effects of the original exposure. Thus, when this film is exposed to yellow light, the effect is to destroy the original completely fogged image and a lower density will be obtained. In Kodak Autopositive Film, this density minimum is practically the density of the clear support itself.

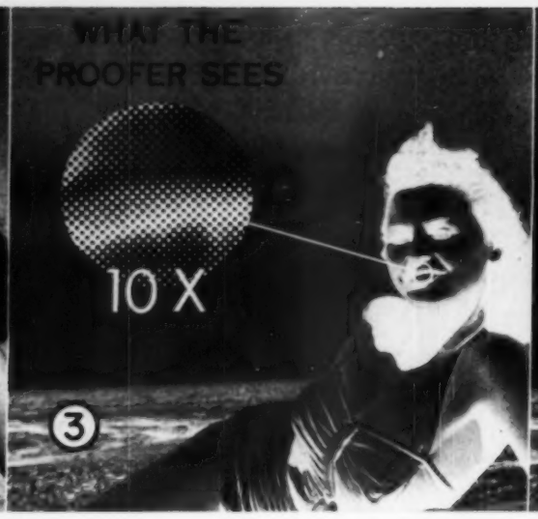
This type of change in the latent image is known as the Herschel Effect since the phenomenon was first observed by Herschel over 100 years ago. The Herschel effect is the (effect of) disintegration of the latent image by exposure to a wave length of light longer than that to which the emulsion is sensitive. Many theories have been advanced to explain the effect. For those who are interested in pursuing them. a thorough treatise is given in *The Theory of the Photographic Process* by Dr. C. E. K. Mees.

Another interesting phenomenon peculiar to these products is that after the yellow erasing exposure, the undeveloped film is in a condition similar to an ordinary negative type of emulsion. That is, exposure to white (or blue) light will produce a latent image which, on development, will produce a high density. In some emulsions, this effect is reversible for several cycles as is shown by Fig. 1.

Photographic products having these characteristics are manufactured to exhibit a pronounced Herschel Effect. Generally, these materials are used to make copies or duplicates of line or halftone work. A yellow light exposure erases the latent image where light hits the film, making a positive from a positive and a negative from a negative. However, by making use of the white light characterictic and the fact that the density may be raised and lowered through many cycles, it is possible to make a product especially suitable for photocomposition. It is possible in many cases to save time and materials in assembling an otherwise complicated subject from several separate positives or negatives.

Following is an illustration of this use for Kodak Autopositive Film, Thin Base. In the interest of brevity, a relatively simple subject has been chosen which illustrates the principles that may be applied just as effectively to a very complicated combination job.

Fig. 2 shows a reproduction as an advertising agent might visualize it on the final printed sheet. It probably does not have the best layout for advertising purposes but was made in this form to better illustrate the process. In order to produce a plate to print this subject, either a photographic positive or negative is required. For our purposes, let us assume that we

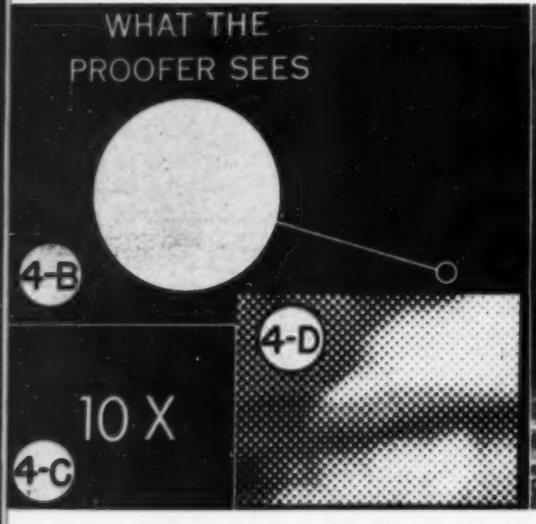


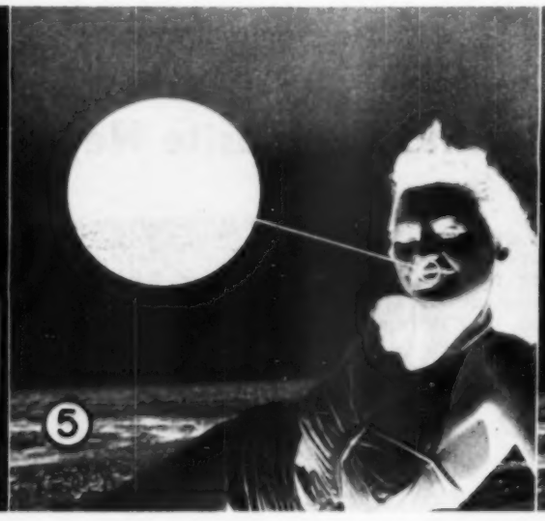
The enlarged halftone area is not to scale. The ten-times (10×) magnification of the lip area has been reduced by a subsequent reproduction in order to get all the illustrations in the space available.

*Fig. 2.—This series of photographs illustrates the use of Kodak Autopositive Film in assembling a composite negative such as a photoengraver might work with. Fig. 2 is a reproduction as an advertising agent might visualize it on the final printed sheet. To get this, a negative is required.*

*Fig. 3. — This is an illustration of a negative which would be required to reproduce the image in Fig. 2. To make this negative, the first consideration as far as the printer is concerned is the art work. He probably would get the art as a glossy print of the picture and two overlays of line work.*

*Fig. 4-A.—This is a negative of the original photograph. The enlargement in the circle of the finished illustration is taken from the teeth portion of this photograph.*



The enlarged halftone area is not to scale. The ten-times (10×) magnification of the lip area has been reduced by a subsequent reproduction in order to get all the illustrations in the space available.

*Fig. 4-B-C-D. — These are the two overlays and the enlargement of the teeth area which are alternately exposed and erased to make the composite negative. This process can be seen, step by step, in Figs. 5 and 6 and 3.*

*Fig. 5. — In this negative the original photograph has been exposed on the Autopositive Film and the circle area erased again.*

*Fig. 6. — In this negative the two lines of type have been exposed by white light as well as the enlargement area. For the final portion of the negative the "10X" will be erased with a yellow light exposure and the negative as seen in Fig. 3 will result.*

wish to make a negative which would appear as in Fig. 3.

As far as the printer is concerned, the first consideration is the art work. He would probably receive the art in three parts—one a glossy print of the picture itself and the others would be two overlays containing the line work. The first step would be to make the usual photographic line negatives of the line work and a halftone negative of the picture. These would appear as in Fig. 4 (A-C). Fig. 4D is a 10X enlarged halftone positive of the teeth made from a part of negative Fig. 4A. Having these negatives, all the remaining exposures are made on the sheet of Autopositive Film which is subsequently developed to produce the composite negative as seen in Fig. 3. A convenient method for preserving register in the final composite negative is to register the negatives all together at this point and punch them on Kodak Matrix Film Punch.

A unique feature of Autopositive Film is that it can be handled in ordinary room light. A sheet of film may be taken out in the light and also punched in the matrix film punch. This then, together with the negative to be exposed, is placed on a pin register board. Two small tabs of double-coated Scotch Tape are inserted between the two film sheets to maintain register when they are transferred from the pin board to the vacuum printing frame.

The first exposure is made using the halftone negative of the main subject, Fig. 4A. It consists of exposure to four reflector flood lamps at a distance of 24 in. for a period of 1½ min. A sheet of Kodagraph Sheeting Yellow is placed between the source and the negative. If a 35 amp. arc is used, exposure would be for 1½ min. at 3 ft. If the film were to be processed after this first exposure, a duplicate of the original negative would result.

The next step is to remove the density in the large circle, the straight line, and the line outlining

(*Continued on Page* 82)

*1706 New Supermarkets*

# Grocery ads are up 4.9% *...but are you profiting?*

Linage for grocery advertising continues to climb, and the increase should be profitable for you.

But if your composing room uses old-fashioned, high-cost methods, the additional linage will merely mean *more expense!*

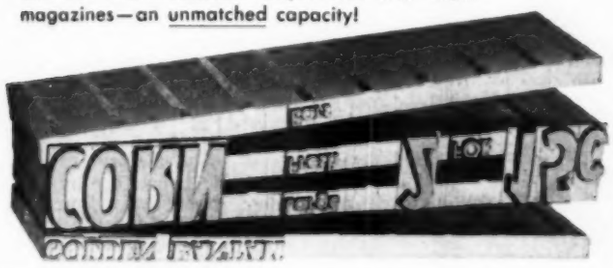
For setting big mixed composition the modern, efficient way, look at the sample shown below in actual size. It was *keyboarded* from the main magazines of a new Rangemaster Model 35 Linotype.

Keyboarding eliminates costly hand composition with its distribution, "cutting in" and underpinning that take up so many expensive job-hours.

The newly engineered Rangemaster Linotypes will set your increased display linage (and large headlines, too) at minimum cost and *larger profit.*

Ask your Linotype Agency for the factual story.

No side magazines were needed for this big type because Rangemaster Linotypes set through normal 36- and condensed 48-pt. from their main magazines—an unmatched capacity!



GOLDEN BANTAM
**CORN** Large Fresh Ears **2 FOR 15c**

**• LINOTYPE •**

**MERGENTHALER LINOTYPE COMPANY**
**29 Ryerson Street, Brooklyn 5, N.Y.**

**Agencies:** Atlanta, Boston, Chicago, Cleveland, Dallas, Los Angeles, New York, San Francisco. **In Canada:** Canadian Linotype, Limited, Toronto, Ontario

LEADERSHIP THROUGH RESEARCH

*Set in Linotype Caledonia and Spartan families*

## Craftsmen Will Honor International President

A reception and dinner in honor of George Wise, president of the International Craftsmen's Assoc., is to be held at Hotel Statler, Cleveland, October 27. The committee, which is composed of Cleveland Craftsmen, says the Saturday evening date was selected to permit out of town guests to attend. All members of the Graphic Arts and their ladies are invited. The program is to include a prominent speaker. Reservations, accompanied by check, may be made with Dick Dawley, Ideal Roller & Mfg. Co., 14820 Detroit Ave., Cleveland 7, O.; telephone, ACademy 1-0404. Tickets are $7.50 per person.

## New Technical Digest

The best articles from European technical and industrial journals, translated and digested, are now available monthly to American industry.

The Organization for European Economic Cooperation, a multi-government agency set up to stimulate economic growth of member nations, will distribute its monthly publication, *Technical Digests*, in the United States.

Subscriptions are handled by the O.E.E.C. Mission Publications Office, 2000 P St., N.W., Washington 6, D. C. The rates are $24 a year or $2.50 per single issue.

## Craftsmen Appointments and the Award Winners

Appointments to head important Craftsmen's activities and winners of contests conducted in the past year by the Intl. Craftsmen's Assoc. were announced in Los Angeles at the Craftsmen's convention.

*Appointed officers*: Technical Commission, Kenneth R. Burchard, Carnegie Tech, Pittsburgh; Membership, Albert L. Kolb, Marine Trust Co., Printing Dept., Buffalo; Public Relations, Floyd C. Larson, Navy Printing Office, Great Lakes, Ill.; Representative at large, Thomas L. Cooper, Southern Photo Process Engraving Co., Atlanta; Publications, Howard N. Keefe, Cincinnati Lithographing Co., Cincinnati.

**Winning International Printing Week poster design is at left; at right is the stamp design chosen for first prize.**

*Committee Chairmen*: Supervisory Training, Gordon T. Matson, Modern Typesetting Co., Los Angeles; Printing Week, Robert M. Edgar, Neyhart Printing Co., Pittsburgh; Club Bulletins, Robert M. Ritterband, Lincoln Printing Co., Los Angeles; Constitution and By-laws, Alfred T. Peters, Thomas C. Peters Printing Co., Utica, N. Y.; Club Programs, Clifford L. Helbert, Marquette University Press, Milwaukee; *SYK Review* Advisory, Thomas P. Mahoney, Regensteiner Corp., Chicago; Participating Memberships, A. Ted Annen, Shelby Photoengraving Co., Detroit; Safety, Peter J. Bernard, H. Wolff Book Mfg. Co., New York, N. Y.

*Printing Week Contests*: Winning stamp design was submitted by Frank Kane, Kane & Associates, San Francisco. Honorable mention: Emil Georg Sahlin, Buffalo; Fred Bernos, New Orleans. Winning poster design was submitted by Harry Roth and Duke Senogles, Topeka. Honorable mention: Messrs. Sahlin and Kane.

*Club Bulletin Contest*: Group A (clubs with 150 or more members), Pittsburgh, Philadelphia and Chicago, in that order; Group B (clubs with less than 150 members), Honolulu, Nashville and Utica, in that order.

*SYK Review Cover Contest*: Rochester (N. Y.), Lehigh Valley (Pa.) and Baltimore, in that order.

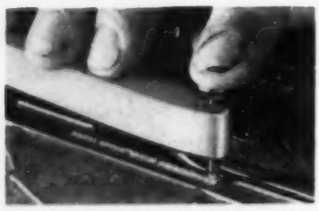
*Club Membership Contest*: Clubs with less than 100 members, Akron; clubs with 100 to 200 members, St. Louis; clubs with more than 200 members, Pittsburgh.


# *Revolutionary!*

## THE Carlson SHELL PLATE FINISHER

● Revolutionary indeed, the Carlson Shell Plate Finisher, figuratively and actually finishes plates from the bottom up... it outlines irregular edges and makes inside mortises faster and cleaner than ever before.

The flat cast is worked face up with the specially designed cutting tool *coming up* from *underneath*. It leaves a vertical edge with no bevel or burr.



***The Locating Pin,*** directly above cutting tool shows exactly where cutting tool will come through plate.

***Outlining:*** Note the clean, sharp and vertical edge of the outlined plate with *all* the chips on the discarded part.

***Inside Mortises:*** Note the clean, exact mortise with *all* the chips on the discarded part. No burr or rough edge.

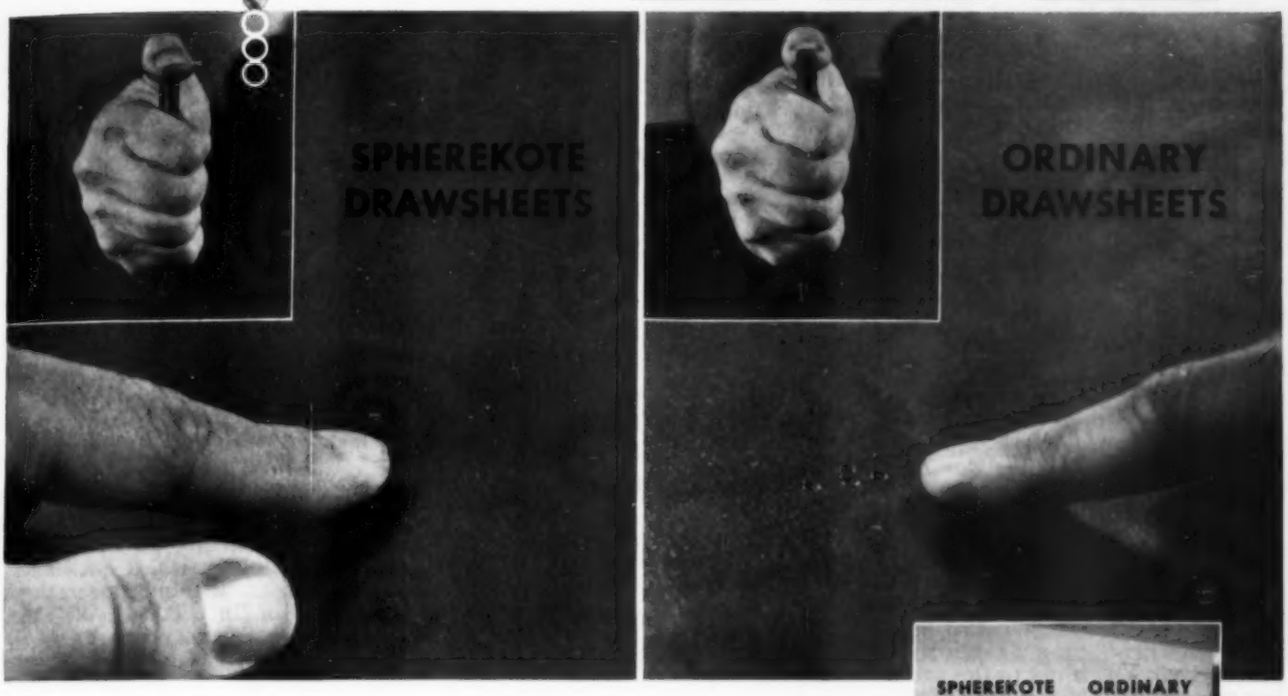
***Finishes Plastic Plates,*** fast and clean with absolutely no danger of cracking or chipping.

PRODUCTION PRODUCTS FOR GRAPHIC ARTS

**Chesley F. Carlson Company**

Ben Franklin Building • Minneapolis 15, Minnesota

# Glass armored drawsheets resist leader marks!




## Resilient Spherekote Drawsheets "Recover" Assuring Long Life, Finer Halftone Reproduction

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Millions of tiny, super-hard glass beads are fused to an extremely tough rubber base. The result is a resiliency and uniformity that gives you long press life and holds press downtime for maintenance to a bare minimum.

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3M

# Monophoto Announced By Lanston

The Lanston Monotype Machine Co. will announce at the International Typographic Composition Assoc. convention in Toronto (Can.) in October that the Monophoto phototypesetting machine is now in production.

The standard Monotype keyboard operates with the new Monophoto exactly as it does with the composition caster. The same perforated paper ribbon, produced on the keyboard, controls the Monophoto just as it does the hot metal caster.

Features of the Monotype system are retained in the Monophoto —composition by individual characters; unit system of values; facilities for automatic centering and quadding; line killer for keyboard errors; wide measure (in any width up to 60 pica em composition).

Instead of producing columns of single type from molten metal, the Monophoto produces exposed photographic film of justified lines ready for developing as positives or negatives according to the printing process for which it is required.

Double or multiple column matter can be produced on a sheet of film without difficulty. Headings and other insertions can be accommodated, and type sizes can be varied between 6 pt. and 24 pt., in fractional sizes if desired.

Leading is independent of the keyboard and can be adjusted on the machine in half-point measures. The equivalent of quadding is produced by advancing the line in multiples of the point size in use to obtain the required white spaces.

Corrections to type matter can be made quickly by replacing the line containing the error.

The photomatrix case is the counterpart of that used in the hot-metal caster. It contains 255 characters and spaces, the former transparent against an opaque ground. This permits roman, small caps, italic and boldface to be mixed in the same line or throughout the copy.

The photographic system consists of a projection light assembly; a mask to limit the illuminated area; the photomatrix case; a line shutter to block the light between line movements, or when a line killer is used; the character shutter that opens for the exposure of each character; a self-contained optical system of lens and two prisms that enlarge or reduce the image to any point size or intermediate size within the range of 6 pt. to 24 pt.; a scanning device consisting of two first-surface mirrors that are controlled by the wedges and move in proportion to the set-width of each character to project each character image successively along the line of composition; and the film magazine that holds the sheet or galley length of film in position for photography, advancing it by the desired body size for each successive line of composition.

Utilizing as it does the existing Monotype-trained personnel, the Monophoto is expected to fit into the pattern of production in many plants, bridging the transition from hot metal to photocomposition by furnishing a choice of composition to the plant that has both.

# Additive Makes Fast Etching Trouble-Free

Major problems were encountered in connection with successful etching of combination plates on a consistent basis after the Miami, (Fla.) *Herald* installed its first Dow-Chemco etching machine in May 1955. Most of the early work was limited to halftones. A second etching machine was added later in which to handle combination and line flats. During months of tedious experimenting, formulas and procedures were established that are collectively felt to be a significant departure from the initial Dow and ANPA system.

One of the most annoying problems with the initial formulas involved the unstable nature of the organic gelatin used as an essential part of the etching bath. The halftone portions and small type areas of combination flats were always in danger of blocking up and loss due to depletion of gelatin in the etching solution by virtue of the gelatin action. After trying a wide range of substitutes for the organic gelatin, Engraving Supt. Ken Brouse found that a small amount of cellulose added to a new bath would remain stable for the life of the bath without any additions. The cellulose additive is available commercially as Cellosize Hydroxyethyl Cellulose WP-300, manufactured by Carbide & Carbon Chemical Co.

The *Herald*, it is reported, is producing consistent quality in both halftone and combination flats averaging 40 to 55 flats per day. Since substituting the cellulose for gelatin no losses or makeovers have occurred attributable to the high speed etching program.

Although operating on a pilot plant basis only, the *Herald* has been producing considerable display advertising via photocomposition which promises to add considerably to the already heavy load in the engraving department.

Anyone interested in further details of the *Herald's* high speed etching program should write to Ken Brouse, Engraving Superintendent, *Miami Herald,* Miami, Fla.

### Miehle Sales-Earnings Up

Increases in both sales and earnings for the third quarter and nine months' periods of the current fiscal year were reported by Miehle Printing Press and Mfg. Co. Combined sales of Miehle and Dexter Folder in the third quarter of current fiscal years, a period ending July 31 for Miehle and June 30 for Dexter, increased from $8,949,-025 in 1955 to $9,822,362 in 1956, J. E. Eddy, president, reported to shareowners. Dexter became a Miehle wholly owned subsidiary on Feb. 28, 1956.

### IAE&S Appoints Larson

Floyd C. Larson, director, U. S. Navy Printing Office, Great Lakes, Ill., has been appointed secretary-treasurer of Intl. Assoc. of Electrotypers & Stereotypers, Inc. He succeeds A. P. Schloegel of Cleveland, who is retiring after 16½ years service with IAE&S. Larson, who will make his headquarters in Cleveland, expects to commence his new duties on or about November 15. He was recently elected a governor of the Intl. Craftsmen's Assoc. and served as Intl. Printing Week chairman from 1954 to 1956.

### Offset Series Author Dies

George J. Lenzer, who was widely known as author of the *ABC of Offset* series which ran for many months in *Printing Equipment Engineer,* passed away on September 17 at his home in North Ridgeville, O. He was also a contributor of many technical articles during his Graphic Arts career. Lenzer, who was a lithographic artist and dot etcher by trade, was last associated with Photo Color Co., Cleveland. He was an active member of the Cleveland Craftsmen's Club and Litho Club of Cleveland. He is survived by his wife, Frances, and three sons. Interment was at Alexandria, Ky.

### Cottrell Passes

Donald C. Cottrell died Sunday, Sept. 16, in Westerly, R. I., at the age of 64. Cottrell had been president of the Westerly company, printing press firm, since 1949. His negotiations in 1953 made the Rhode Island company a subsidiary of Harris-Seybold Co.

# PATENTS

## For The GRAPHIC ARTS

Covering patents issued July 3, 10, 17, 24 and 31.

All new patents for the Graphic Arts are reported exclusively for *Printing Equipment Engineer* by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issued each week. *Printing Equipment Engineer* is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

### *Composing Room:*

#### PHOTOGRAPHIC TEXT CORRECTION MACHINE

In a photographic-printing-composing machine, a complete typographic page including headings, captions, and titles may be made up with minimum manual labor. The machine includes a plurality of stationary compartments each adapted to receive copy of the same type size, a camera lens system, a movable optical system for selectively refracting light onto a copy-subject in any of the compartments, and a mechanism for reflecting the image to the lens. Patent 2,752,818 by Paul C. Gehring, assigned to Fairchild Camera and Instrument Corp.

#### DEVICES FOR DETERMINING CHECK SYMBOLS FOR SYMBOL GROUPS

To facilitate the detection of errors in arbitrary symbol groups encountered in composing machines, an electrical checking machine that is easy to operate and which may be readily incorporated in any kind of machine is used. Patent 2,754,054 by Willem H. T. Helmig and Theodorus Reumerman.

#### SCALE MECHANISM FOR TYPOGRAPHIC TAPE PERFORATOR

Reference is made to photocomposing machines of the general type of patent 2,552,882, and to the improvements in sine bar arrangement. This scale mechanism indicates justifiability of composed lines of type matter under two conditions of operation simultaneously. Patent 2,755,859 by Maurus T. Goetz, assigned to Teletypesetter.

●

### *Platemaking:*

#### PRINTING DEVICE

To obtain a more stable base or block for mounting photoengraving, electrotype and stereotype plates, this patent features a base of a cast magnesium alloy having ribs integrally formed on its back side for strengthening and rigidifying purposes. Such a base is unaffected by humidity and has no pockets into which type may fall. Patent 2,753,799 by Robert T. Rice, assigned to Vandercook & Sons, Inc.

#### PRODUCTION OF SCREENED PHOTOGRAPHIC IMAGES

The screened photographic images produced are suitable for use in manufacturing photogravure printing plates. The process is an improvement on the Dultge process in which two photographic positives are made from a photographic negative. Patent 2,754,208 by Rudolf M. P. Conrad.

#### PRODUCTION OF PRINTING PLATES

A printing plate consisting of a film of nickel accurately formed to the contours of a mold


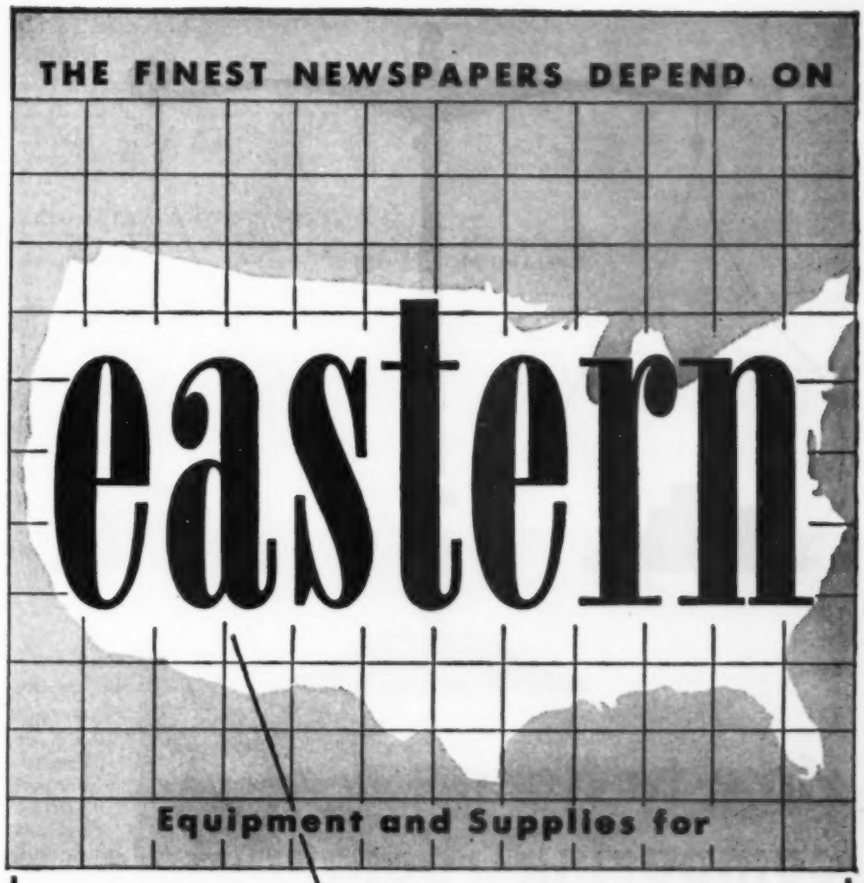


Photo-engraving Department
Stereotype Department
Composing Room
Press Room

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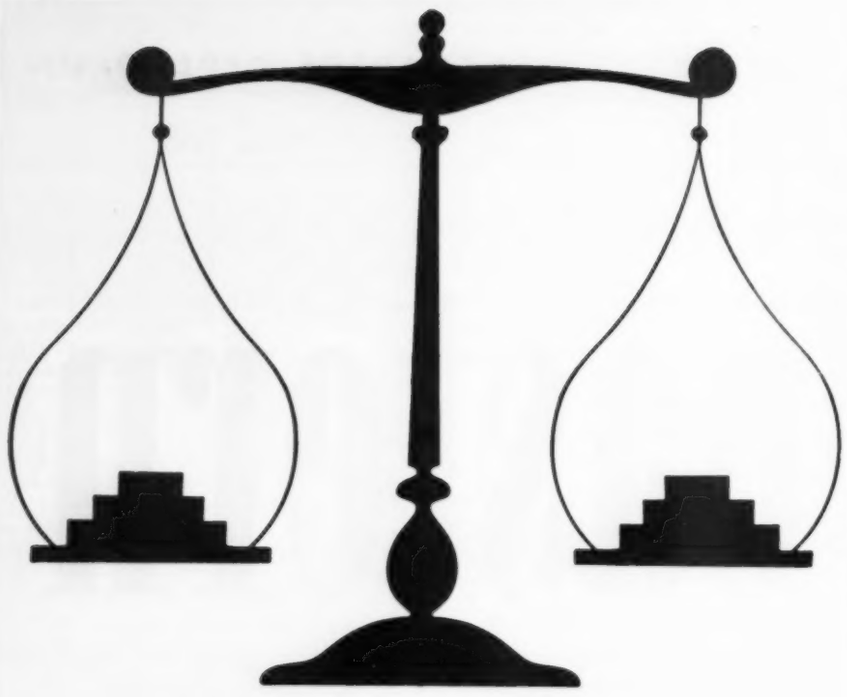

# How to keep composing-room metals in balance

**1** Replace every pound of dross with one pound of Federated Mor-Tin.®

This maintains balances of both total quantity and the ingredients which are lost most readily by drossing.

**2** Check your re-melt practice occasionally. Close supervision of temperature by pyrometer will help insure quality of re-melted metal and result in a minimum of dross.

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| Cincinnati, Ohio | Milwaukee, Wis. | Portland, Ore. | Whiting, Ind. (Chicago) |
| Cleveland, Ohio | Minneapolis, Minn. | Rochester, N. Y. | |


from which it is produced is obtained by a process in which the number of steps is materially reduced. This is accomplished by subjecting the mold of a page to be printed to 200 deg. F. and then exposing the heated mold to an atmosphere of a nickel bearing gaseous compound which decomposes upon contact with the mold surface to deposit a metal film thereon. Patent 2,753,800 by Peter Pawlyk and Herman R. Nack, assigned to The Commonwealth Engineering Co. of Ohio.

## LIGHT-SENSITIVE PARA QUINONE DIAZIDES FOR MAKING PRINTING PLATES

A light-sensitive material for the photomechanical duplication of images is prepared from a base having a light-sensitive layer which includes an insoluble para-quinonediazide. Base material may be zinc or aluminum and the insoluble coating layer may be an aryl substituted sulfo acid ester of para-naphtho-quinone diazide. Patent 2,754,209 by Maximilian P. Schmidt and Oskar Sus, assigned to Azoplate Corporation.

## AQUEOUS COMPOSITION DEVELOPER

The composition is effective on dichromate-albumen type printing plates as a developer, particularly pre-sensitized planographic printing plates which use extremely thin diazo resin light-sensitive coatings. The composition comprises a pigment and a solution, in a mixture of a volatile water-immiscible solvent and a water-miscible solvent, of an unmodified hydroxyl-containing resinous glycidyl polyether of a dihydric phenol. Patent 2,754,279 by Myron W. Hall, assigned to Minnesota Mining & Mfg. Co.

## FLUORESCENT RETOUCHING MATERIALS

For retouching work in preparing halftones, etc., a gray paint comprising an opaque white pigment other than titanium oxide, a black pigment, an agent which luminesces when irradiated by ultraviolet light, and an adhesive, is used. This assures that the reflective values of all the tones above black in the final reproduction are uniformly increased. Patent 2,754,427 by Burtt L. Berry.

## METHOD OF FORMING MOLDED PRINTING NEGATIVES AND POSITIVES

The negatives and positives are used in forming roto and offset printing plates. Special or conventional routed or beveled master or etched letterpress printing plates or combination, halftone, line and type plates may be used in the method. Patent 2,754,606 by John Williams.

## PHOTOGRAPHIC REPRODUCTION PROCESS

In making lithographic printing plates, an exposed and solvent-moistened light-sensitive layer is pressed onto a conventional hydrophilic lithographic surface, such as a Duplimat master. The prints obtained are composed of pigmented light-sensitive material and are highly receptive of greasy lithography printing inks. Patent 2,756,143 by Alexander Murray, assigned to Eastman Kodak Co.

## PHOTOGRAPHIC EMULSION HAVING CLAYDEN EFFECT SUSCEPTIBILITY

For preparing a pre-screened photographic material with which halftone negatives may be prepared without pre-screening for letterpress, lithographic and intaglio printing, the degree of sensitivity of the emulsion is increased by the addition of 1-carboxymethyl-5-[(3-ethyl-2-(1)-benzoxazolylidene)-ethylidene]-3-phenyl-2-thiohydantoin. Patent 2,756,148 by Edgar A. MacWilliam, assigned to Eastman Kodak Co.

## PHOTOGRAPHIC METHOD AND LIGHT SENSITIVE ARTICLE FOR MAKING PRINTING PLATES

Use of unsaturated aldehydes applied to a metal base has been found to produce a lithographic printing plate which has a high degree of adhesion for greasy ink. The aldehydes useful in this method are of the general formula $R\text{-}(CR_1{=}CR_2)_x\text{-}CHO$. Patent 2,757,090 by Wilhelm Neugebauer and Martha Tomanek, assigned to Azoplate Corporation.

**PATENT SEARCHES**

**For Patent Research in the U.S. Patent Office, or a prompt estimate on any type of search, write INVENTION, INC. Munsey Bldg. Washington, D.C.**

### PHOTOGRAPHIC SILVER HALIDE EMULSIONS CONTAINING PHYTIC ACID

The emulsions of this patent have markedly improved sensitivity and low fogging properties. They are useful for coating a variety of bases, and can be applied to lithographic film. Patent 2 757,088 by Gustave W. Moessen, assigned to E. I. du Pont de Nemours and Co.

### PHYTIC ACID SENSITIZER FOR SILVER HALIDE EMULSIONS

The emulsions use phytic acid and a water-permeable colloid. They can be used as lithographic film, and offer simple and effective high speeds with low development fog values. They have good age stability. Patent 2,757,089 by Gustave W. Moessen, assigned to E. I. du Pont de Nemours & Co.

### PLATE CURVING MACHINE

This apparatus, for the controlled bending of printing plates, uses an arrangement of rollers which maintains registration accurately while preventing sharp bends on their cross sections. Patent 2,756,803 by Harry W. Faeber, assigned to Time, Incorporated.

●

## *Printing Inks:*

### PRINTING INK

A more controllable printing ink is obtained by using a sulfonate of the proper mean molecular weight with varying amounts of water. One claimed ink comprises a mineral oil, water, a printing ink color and from 15% to 50% by weight of an alkali metal alkylaryl sulfonate and an alkaline earth metal alkylaryl sulfonate. Patent 2,754,218 by William A. Magie II.

### ANTI-MISTING PRINTING INKS

The ink will operate on high speed printing presses with minimum misting and consists of liquid hydrocarbon oil containing 15% of an aromatic hydrocarbon oil, a finely divided carbon pigment and a finely divided addition product of a swelling bentonite and 1 amino ethyl, 2 heptadecenyl glyoxalidine acetate. Patent 2,754,219 by Andries Voet and Alden E. Yelmgren, assigned to J. M. Huber Corp.

### EXCELLENT DRYING HIGH GLOSS LITHO INKS

Lithographic inks having excellent drying qualities and high gloss are obtained by adding tall oil esterified with a mixture of alcohols consisting of a resinous polyalcohol to chinawood oil. The polyalcohol is the reaction product of bis-(4-hydroxy-phenyl) 2 2 propane and an epihalohydrin. Patent 2,754,277 by John W. McNabb, assigned one-half to American Can Co. and one-half to Kienle & Co.

●

## *Printing Presses:*

### ROTARY PRINTING-CUTTING MACHINE WITH INTERCHANGEABLE CYLINDERS

All of the mechanisms whose speed must be varied when changing over to different page sizes, such as printing, cross-cutting and folding mechanisms, are driven through a special shaft which is coupled through a change-speed gear, i.e., an interchangeable gear wheel, with the driving motor and other mechanisms or with the gear train connected thereto. This assures even output regardless of the size sheets being handled. Patent 2,753,797 by Josef Burgmer.

### INK-REPELLANT APPLYING METHOD FOR ROTARY LITHO PRINTING APPARATUS

An electrical charge is used to apply ink repellant material such as water or a water solution including gum arabic. The amount and distribution of the ink repellant can be controlled. Patent 2,753,796 by William H. Wood and Howard A. Pritchard, assigned to Harris-Seybold Co.

### AUTOMATIC CONTROLS FOR ROTARY OFFSET PRINTING MACHINES

The control sets a press for a certain number of dampening revolutions, as well as for the number of sheets it is desired to print. When dampening is completed, the inking rollers are automatically lowered into contact with the plate, and the sheet feed is activated. Printing continues until the desired number of sheets has been printed. Patent 2,756,672 by Harvey F. George, assigned to Davidson Corporation.

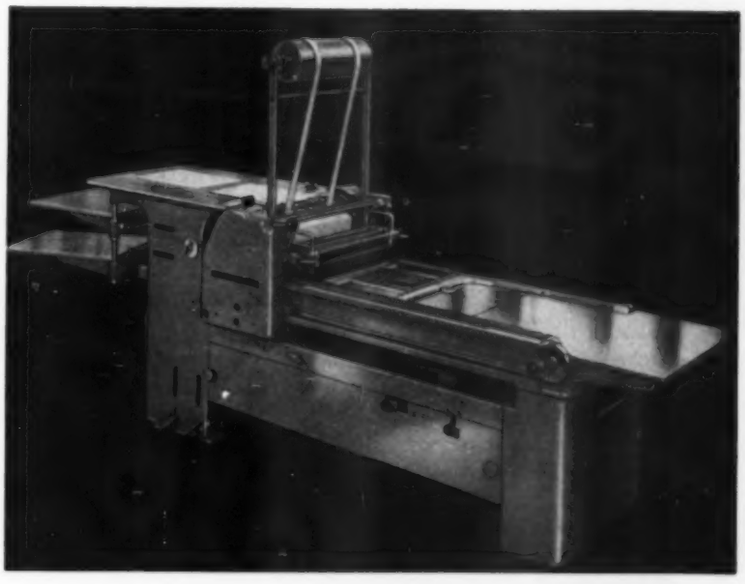
### INK DISPENSER

The dispenser is for applying printing ink to printing presses having a cartridge holder and plunger and a tabular disposable cartridge. The new arrangement provides a device for detachably securing the plunger to the end movable piston-like wall of the cartridge so that the wall may be moved in opposite directions to both expel and draw in ink through the spout. Patent 2,754,033 by Dudley W. Etter.

### PORTABLE INK POUNTAIN

The fountain is particularly applicable for transfer between an ink drum and an adjacent ink roller, but may be used with any two rollers in the ink feed path of a printing press which rotate in opposite directions. The fountain, once adjusted, need not be touched when changing from standard to reverse rotation. Patent 2,754,753 by Corson W. Chase, assigned to The Goss Printing Press Co.

**Vandercook Power 219** *with Adjustable Bed and Automatic Tape Sheet Delivery. Maximum plate or form size 18" x 24". Maximum speed, 500 proofs per hour.*



# Why Waste High Priced Operator Energy On A Crank Handle?

Fast and completely power operated, the Vandercook Power 219 will pay for itself by giving you more production and better quality! The Vandercook Power 219, when equipped with the new Automatic Tape Sheet Delivery which returns the printed sheet to the operator at the feed board, is the most efficient test press for the production of 1 to 1000 proofs of the finest quality. Trade in your hand driven proof presses on modern high speed Power 219's. Write for information.

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The fast-growing popularity of Hamilton-equipped dispatch rooms proves they produce big savings for newspapers of all sizes. You owe it to yourself to have the whole story—write for complete details now!

*A dispatch room equipped with compact, modular Hamilton dispatch units. This flexible equipment can be easily adapted to newspapers of any size.*

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**DISPATCH EQUIPMENT**

**Hamilton Manufacturing Company**
**Printers Equipment Division**
**Two Rivers, Wisconsin**

Please send complete details on dispatch room equipment.

Name_____

Firm_____

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### PRINTING PLATE CLAMPING DEVICE

The mounting and planning of printing plates is expedited by this clamping device. For use with a cylindrical supporting bed, it provides easy, fast actuation and removal, yet remains in place while the bed is in various positions. Patent 2,756,675 by Albert J. Monaco, assigned to National Lead Co.

## *Feeding, Folding, Delivery:*

### AUTOMATIC COLLATOR

A continuously moving conveyor receives a sheet from each of a plurality of stack stations. An automatic control prevents further pickup of sheets upon failure of the sheet delivery to pick up a sheet from its stack. This collator accommodates sheets of various dimensions, and may be employed with other types of sheet handling equipment. Patent 2,753,180 by Wilbur Evan Thomas.

### SHEET FEEDING MECHANISMS

In sheet feeding mechanisms which feed single sheets by conveyor onto a feed-board where registration of each sheet in turn is effected against front lays, the front edge of a sheet may rise and pass over the lays out of time without registering. This invention prevents this by use of a suction gripper which projects upward through the board to engage the front edge of a sheet and draw it down as it approaches the lays. Patent 2,753,184 by Headley Townsend Backhouse.

### FLYER SHEET DELIVERER FOR OFFSET MACHINES

To avoid buckling and smearing of sheets, the chain wheels of this delivery mechanism are mounted independently of the offset cylinder. Thus, the axis of the off-set cylinder is offset in such a manner in relation to the axis of the chain wheels that the peripheral parts of the offset cylinder and of the chain wheels carry out a radial movement in relation to one another. Patent 2,753,798 by Otto Babst, assigned to Rotaprint Aktiengesellschaft.

### METHOD OF AND MEANS FOR REGISTERING AND TRANSFERRING LAPPED SHEETS

In a high-speed, rotary, sheet transfer device a method and mechanism are provided whereby the leading edge of each individual sheet in a stream of lapped sheets is registered and gripped while still lapped by a part of the preceding sheet to allow as much time as possible for registration of the sheet. The feeding is stopped whenever a defective sheet is presented. Patent 2 754,118 by Christen R. Kaddeland, assigned to Miehle Printing Press & Mfg. Co.

### TENSION REGULATOR AND GUIDE AND CONTROL MEANS THEREFOR

The regulator controls the tension on sheet material being unwound from a roll. A valve is responsive to the tension on the sheet material and imparts actuating air pressure to an air pressure responsive valve between the brake on the roll and the air pressure source. Patent 2,755,032 by Edgar J. Justus, assigned to Beloit Iron Works.

### FEEDING METHOD AND APPARATUS FOR PAPER

The feeding device is employed in feeding paper and particularly stacked paperboard. The feed member is self cleaning and provides enhanced frictional engagement with the sheets so as to obviate misses. Patent 2,755,086 by Albert R. Lubersky, assigned to Fibreboard Products Inc.

### SHEET CONTROLLED INTERRUPTER FOR ROTARY PRINTING MACHINES

For use with machines having cylinders which separate the printing couples if a sheet fails to be fed, this invention uses feed rollers to detect the absence of a sheet. It releases the latch mechanism in time relation to the machine cycle, and makes possible the elimination of supplementary feeler fingers with their additional operating parts. Patent 2,756,673 by Harvey F. George, assigned to Davidson Corporation.

### FEEDING-AND-STACKING METHOD AND MACHINE

Feeding and stacking mechanism of the general types disclosed by patents 2,521,075 and 2,576,956 has been improved to make it possible to direct the direction of feed of adjacent rows of sheets carried by the tapes separately and independently, instead of simultaneously, and to handle sheets of different dimensions at different locations. Patent 2,756,050 by Louis L. Matthews and Merton L. Matthews, assigned to Maxson Automatic Machinery Co.

### SIGNATURE DELIVERIES FOR FORMER FOLDERS

Signatures are released from their delivery cylinders at a point beneath the pile of previously delivered signatures. A delivery pile box registers them with an air jet assist. An endless conveyor adjacent the delivery pile box further speeds the handling and removal of the signatures. Patent 2,756,996 by Hans J. Luehrs, assigned to The Cottrell Company.

•

## *Binding, Cutting, Perforating:*

### STAPLING MECHANISM

The stapling mechanism is employed for stapling together a number of webs or sheets of paper and in box making machines. The feed mechanism enables the wire fed to the staple cutting, forming and inserting device to be continuously maintained from a number of spools without stopping the wire-consuming machine. Patent 2,754,958 by John T. Murrell and George Turrall, assigned to R. W. Crabtree & Sons Ltd.

•

## *Miscellaneous*

### ARC LAMP CONTROL SYSTEM

The system is for use in the graphic arts industry for controlling light intensities in an improved manner. A small change in arc current may be used to control accurately the spacing between the electrodes producing the arc. Patent 2,754,446 by Joseph W. Pollard, assigned to nuArc Company, Inc.

## Makeready System

**(Continued from Page 46)**

job; and *J*, miscellaneous items such as splitting rollers, changing rollers, setting rollers, loading feeder, or any other mechanical operation preparatory to running.

The time sheet enabled us to plot exactly the amount of time spent on each operation. Some of the time amounts were ridiculous, but the check system permitted us to show the pressman where we felt he was out of line. By gentle persuasion and a lot of hard work we were able to standardize pretty well our time for the various operations. Now, when we get a time sheet with abnormal time in any category, we immediately go to the man and find out what happened. This system has not eliminated the pressman's natural inclination to alibi; however, by a day to day check on each man we are able to tell who the chronic trouble-maker is, and by continual pressure keep him up to par. We now have a friendly sense of competition in the pressroom which has helped to cut down makeready time.

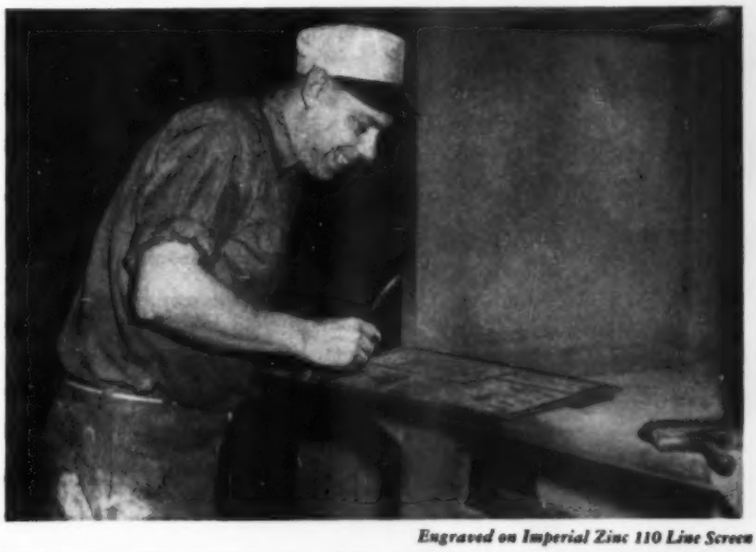
All makeready time is entered on master production sheets in the office day by day. At about 10 a.m. each day the press foreman checks over these sheets; if possible, the plant manager goes over them with him. If any time seems abnormal we can get to the root of the trouble immediately. You may ask: What is the use of going to the pressmen after the job is done? We have found that going to them at any time has the psychological effect of keeping them on their toes. If troubles do come up they go to the foreman immediately rather than sit around wondering. Also, we have found that pressmen were suffering with presses that were deficient in some parts. Now, if the press is not operating at peak efficiency they let us know. It has been my contention for a long time that very few plant managers check makeready times. They may see that form X took six hours to makeready and shake their heads in bewilderment, or they may ask the foreman what happened on this or that form and get back a variety of answers, such as: "Poor stock. Had a heluva lot of workups," or "Someone has to get the composing room on the ball; they fouled that form up good." You know most of the alibis.

#### Operation Time Allowances

Following is a step by step picture of the breakdown on our makeready time sheets with a rough estimate on time we allow for each:

(1) The old form is removed from the bed of the press. For this step we usually allow 1 to 2 units, 6 to


DOES YOUR ETCHER SAY,



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12 minutes, depending on the size of the press and form.

(2) The new form is placed on the bed of the press. Here again we allow 1 to 2 units, depending on the size of press and form. In this step the form is unlocked, planed down, and centered on the bed. It is then relocked and clamped in position on the bed of the press.

(3) Cuts are underlaid. It is very possible that this has been done before. If not, then the helper starts this job while the pressman adjusts the feeder and sets the guides, rollers, etc. If underlaying is done on the press, this time is kept separate at this stage; if it is done on the stone the time is marked on the sheet in logical sequence. There is a possibility that the pressman or helper can underlay these cuts while another form is on the press and running; however, this time is kept separate and charged to its proper place. Time on this setup will vary in accordance with the size of the form, number of cuts, etc. Usually 2 to 3 units are sufficient, again depending on press size, number of cuts, etc.

(4) Changeover of press. In this step we have a number of variables which are difficult to time. Much depends on the amount of time necessary to break the press down or out to its proper size. Here again, however, we team up so that the pressman is doing this job while the helper is underlaying cuts, filling the fountain, changing rollers, getting stock ready for the run, etc. This step will vary from 3 to 4 units and longer. On repetitive forms this step is not necessary.

(5.) Changing packing. The helper usually takes care of this. We have uniform packing on all our presses. This packing consists of four whites, each 0.002 in., two hangers, 0.005 in. plus; and one drawsheet, 0.005 in. plus. On repetitive forms, four or five packings may be cut and stored ready for use. If no change in permanent packing is needed, 2 units are the maximum for this step.

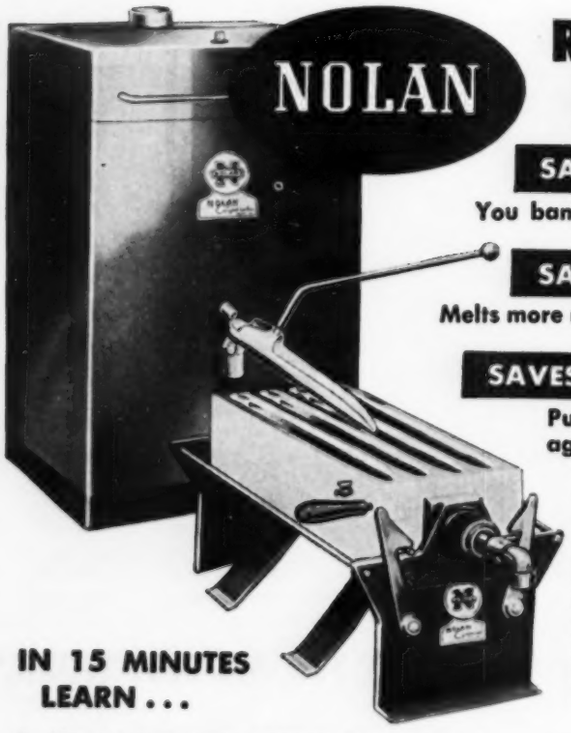
(6.) Lineup of form. Where there are vast numbers of presses, lineup becomes a problem, and special crews are sometimes necessary to eliminate bottlenecks at this point. We did not have this problem. Our procedure calls for the pressman to pull two sheets, one for lineup and one for final proofreader's OK. The press foreman takes one sheet and lines it up on a conventional light table. While the sheet that has gone to the proofroom is being checked, the necessary moves are made on the form to achieve lineup. Here again we have a 2 to 3 unit step as has been mentioned previously.

### Leveling is Necessary

(7.) Actual makeready. We will assume that all the steps up to the actual makeready procedure have been done. The form is lined up and we are ready to pull our first sheet. This we do. The pressman checks the printed sheet carefully. He may find that he needs some extra ink. If so, he adjusts accordingly. This first sheet, which we call the leveler, usually shows areas that have to be worked on. Some of you may ask at this point: "Why level the form? We thought the 3M process took care of this." As most pressmen and foremen will tell you, there are always some inequities in either type, cuts, rules, and the press equipment itself. These things the process sheet will not correct; it will help them. However, I would not be representing the true facts if I stated that all you had to do was slap on the process sheet and push the run button. A leveling operation is necessary at this point.

This leveling sheet can be as detailed as the individual pressman feels is necessary. We do not find that a great deal of time should be spent on this step. Our men pull a sheet and, as in the usual makeready procedure, the back of the sheet is marked out and tissue sheets pasted down. We do this, but we do not do it to the degree we would if we were not using the 3M process. We try to get the form fairly level; this will aid the 3M process and does not waste a lot of time for pasteup. Here you will find your greatest source of trouble with the pressmen. They will naturally assume that they are making ready and will want to spend a lot of time marking out. Break this habit pronto or you're in trouble!

Following the leveling process, the helper should have cut a 3M process sheet to the size of the form ready for processing. In the case of a 2/0 Miehle, the sheet is cut to 38 in. by 50 in. Our regulation packing is on the cylinder. The press is inked up. If a color form is going on, then just the plate and form rollers are inked with black ink. At this point you should use a little heavier ink

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Rome, New York

than you normally carry. This is to give the process sheet a denser concentration of ink on the printing areas.

The makeready sheet is fed to the grippers backed by a sheet or sheets of the same weight stock to be printed. This additional pressure assures a fairly heavy contact on impression. Impression is important here only in that it makes all elements of the form show up on the process sheet. Press speed should be attained when pulling the process sheet. Press is stopped while grippers still retain sheet.

### A 'Critical' Operation

At this point the stabbing operation is done. This phase of the step is critical. Extreme care must be taken that the stab tool is held in a vertical position. Stab marks must be placed at the edges of each section the makeready sheet is to be hung in. If you are going to quarter this sheet you will have to stab each of the four quarters. If you are going to hang half sheets, then each of the halves will have to be stabbed. On presses up to 38 in. by 50 in. we have found that we get good results on hanging the half sheet; however, some shops may prefer quarter sheet hanging.

As soon as the sheet has been stabbed, it is removed from the press. A 38 in. by 50 in. sheet has to be split in half. The exposure unit will take a sheet 28 in. wide by 70 in. in length. After splitting the process sheet it is taken to the exposure unit and each section is exposed. At this point the infrared light exposes the inked areas causing them to swell in proportion to their tonal values. Each section requires 1 min., 10 sec. for processing. This is your makeready.

We are now ready to secure our drawsheet and pull an impression. We have found that the best procedure to follow is to run 50 to 100 sheets. This gives the makeready time to mold itself into the top sheet and make the necessary corrections. After running a number of sheets, the press is stopped and the printed sheet is checked. It was the exception rather than the rule that this inspection indicated a need for additional spotting. If additional spotup is needed, it is taken care of. Experimentation with the quantity of ink carried prior to inking the process sheet plus additional pressure on the sheet while pulling, will decrease the need for spot-up.

After much trial and error we found that the best position in which to bury our 3M makeready sheet was 0.012 in. under the top sheet. This gave us the best results. You may find that an additional white sheet

**Fourth Fotosetter Installed** — Philadelphia's Typo Photo-Composition, Inc., has installed its fourth Intertype Fotosetter photographic linecomposing machine. Announcement was made recently by Samual A. Dalton (at left in picture), president of Typo-Composition, Inc. and its parent corporation, Typographic Service, Inc., Philadelphia. Typographic Service, Inc. is said to be the second largest advertising typographer in the United States.

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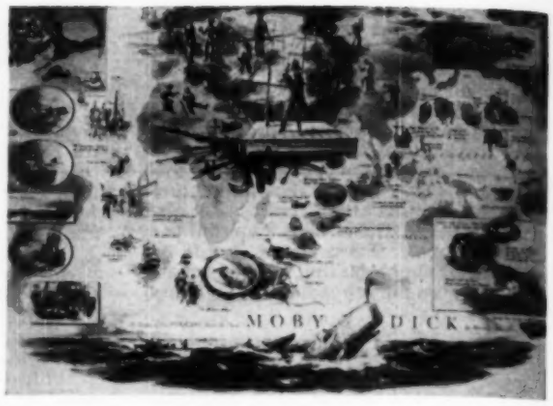
on top of the process sheet will serve you better. Once again, this is a matter of individual preference.

The time for this step will vary. We find that between 4 and 5 units is the standard time.

After the press has run for a few minutes and the ink has been adjusted, the sheet can be checked again for weak spots. If any further stops have to be made, the times are marked on the makeready time sheet.

It would not be fair to state that the 3M process is responsible for all the time saved. It did, however, point up the fact that here we had a process that could save us time. But we had to know where we were deficient, and so the time system highlighted our weak spots and we were able to correct them.

**Moby Dick Calendar**—Moby Dick illustrates Harris-Seybold's 1956-57 midyear calendar, recently mailed to over 20,000 Graphic Arts people. Printed in four colors by offset lithography, the illustration was painted by Everett Henry for Harris-Seybold Company. Reproduction rights to the illustration are now available. Licensing fee goes to Education Council of the Graphic Arts Industry, Inc. For further information on reproduction rights, or for copies of the calendar or for prints suitable for framing, contact Harris-Seybold Company, 4510 E. 71st St., Cleveland 5, O.




# Graphic Arts Meetings

*(With Organization Name and Correspondence Officer)*

**American Photoengravers Assoc.** — 1956 Conv., Hotel Statler, Detroit, Mich., Oct. 8-10. Exec. Secy. Frank J. Schreiber, 166 W. Van Buren St., Rm. 430-A, Chicago 4, Ill.

**ANPA Mechanical Conf.**—1957 Conf., Morrison Hotel, Chicago, June 10-12. Mgr. Richard E. Lewis, ANPA Mechanical Dept., 370 Lexington Ave., New York 17, N. Y.

**Book Manufacturers' Institute**—1956 Conv., The Greenbrier, White Sulphur Springs, W. Va., Oct. 11-13. Secy. Miss A. G. Watson, 25 W. 43rd St., New York 36, N. Y.

**Fifth District Craftsmen's Conf.** — 1957 Conf., Brown Hotel, Louisville, Ky., May 17-18. Secy.-Treas. George W. Thompson, Toledo Colortype Co., 1711 Jefferson Ave., Toledo, O.

**Graphic Arts Trade Assoc. Executives**—1957 Conf., Biltmore Hotel, Los Angeles, Oct. 26-27. Secy.-Treas. W. Floyd Maxwell, LNA, 420 Lexington Ave., New York 17, N. Y.

**Gravure Technical Assoc.**—1957 Conf., Drake Hotel, Chicago, March 6-8. Exec. Secy. Edward S. St. John, Room 4800, 30 Rockefeller Plaza, New York 20, N. Y.

**Great Lakes Newspaper Mechanical Conf.**—1957 Conf., Statler Hotel, Cleveland, O., Jan. 13-15. Secy.-Treas. Don Clark, Stereotype Supt., Grand Rapids (Mich.) *Press*.

**Illinois Newspaper Mechanical Conf.** —Secy.-Treas. Arthur Kramer, Joliet (Ill.) *Herald-News*.

**Intl. Assoc. Electrotypers & Stereotypers**—Exec. Secy. A. P. Schloegel, 701 Leader Bldg., Cleveland 14.

**Intl. Assoc. of Printing House Craftsmen**—1957 Conv., Statler Hotel, Buffalo, N. Y., Aug. 4-7. Exec. Secy. Pearl E. Oldt, 411 Oak St., Cincinnati 19, O.

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**Intl. Graphic Arts Education Assoc.**—Exec. Secy. Samuel M. Burt, 5728 Connecticut Ave., Washington 15, D. C.

**Intl. Printers Supply Salesmen's Guild**—1957 Conf., Statler Hotel, Buffalo, N. Y. Secy. Francis J. Tominey, *New England Printer & Lithographer*, 470 Atlantic Ave., Boston 10, Mass.

**Intl. Typographic Composition Assoc.**—1956 Conf., Royal York Hotel, Toronto (Ont.) Can., Oct. 10-13. Exec. Secy. Frank M. Sherman, 1015 Chestnut St., Philadelphia 7.

**Iowa Daily Newspaper Mechanical Conf.**—1957 Conf., Hotel Hanford, Mason City, Ia., May 4-6. Secy.-Treas. Paul F. Kamler, Mechanical Supt., Clinton (Ia.) *Herald*.

**Kansas-Missouri Newspaper Mechanical Conf.**—Kansas Secy.-Treas. Larry Miller, Kansas Press Assoc., 701 Jackson St., Topeka, Kans. Missouri Secy.-Treas. William A. Bray, Missouri Press Assoc., 220 Walter Williams Hall, Columbia, Mo.

**Lithographers National Assoc., Inc.**—1957 Conf., The Greenbrier, White Sulphur Springs, W. Va., Apr. 1-3. Exec. Dir. W. Floyd Maxwell, 420 Lexington Ave., New York 17, N. Y.

**Mid-Atlantic Newspaper Mechanical Conf.**—1957 Conf., Sheraton Hotel, Philadelphia, Pa., March 21-23. Conf. Dir. Theodore A. Serrill, PNPA General Mgr., 2717 N. Front St., Harrisburg, Pa.

**National Assoc. of Litho Clubs**—1957 Conv., Palmer House Hotel, Chicago, May 3-4. Exec. Secy. Eugene Hanson, 4440 Bessie St., St. Louis 15, Mo.

**National Assoc. of Photo-Lithographers**—Exec. Dir. Walter E. Soderstrom, 317 W. 45th St., New York 36, N. Y.

**National Paper Trade Assoc.**—1957 Meeting, Waldorf—Astoria Hotel, New York, N. Y., March 25-27. Secy. J. H. Londergan, 220 E. 42 St., New York.

**National Printing Equipment Assoc., Inc.**—1956 Meeting, Statler Hotel, Los Angeles, Calif., Oct. 20-Nov. 1. Secy. James E. Bennet, 140 Nassau St., New York 38, N. Y.

**National Safety Council Printing and Publishing Section**—1956 Conf., Conrad Hilton Hotel, Chicago, Oct. 24-25. Staff Rep. Arthur Siedlecki, National Safety Council, 425 N. Michigan Ave., Chicago 11.

**New England Composing Room Executives Assoc.**—1957 Conf., Keene, N. H. Secy. Lewis R. Green, Westerly (R. I.) *Sun*.

**New England Newspaper Mechanical Conf.**—1956 Conf., Statler Hotel, Boston, Mass., Oct. 20-21. Secy.-Treas. Walter C. Crighton, Comp. Room Supt., New London (Conn.) *Day*.

**New York State Capital District Mechanical Conf.**—1957 Conf., Sheraton Ten Eyck Hotel, Albany, N. Y., Jan. 19-20. Dir. Floyd Laurenty, Albany (N. Y.) *Times-Union*.

**Northwest Mechanical Conf.**—1957 Conf., Hotel St. Paul, St. Paul, Minn., Feb. 23-25. Secy-Treas. Ralph N. Carson, Linecasting Instructor, Dunwoody Industrial Institute, 818 Wayzata Blvd., Minneapolis, Minn.

**Printing Industry of America**—1956 Conf., Statler Hotel, Los Angeles, Calif., Oct. 30-Nov. 2. Gen. Mgr. Bernard Taymans, 5728 Connecticut Ave., N.W., Washington 15, D. C.

**Research and Engineering Council of the Graphic Arts Industry, Inc.**—1957 Meeting, Ben Franklin Hotel, Philadelphia, May 15-17. Managing Dir. Robert E. Rossell, 5728 Connecticut Ave., N.W., Washington 15.

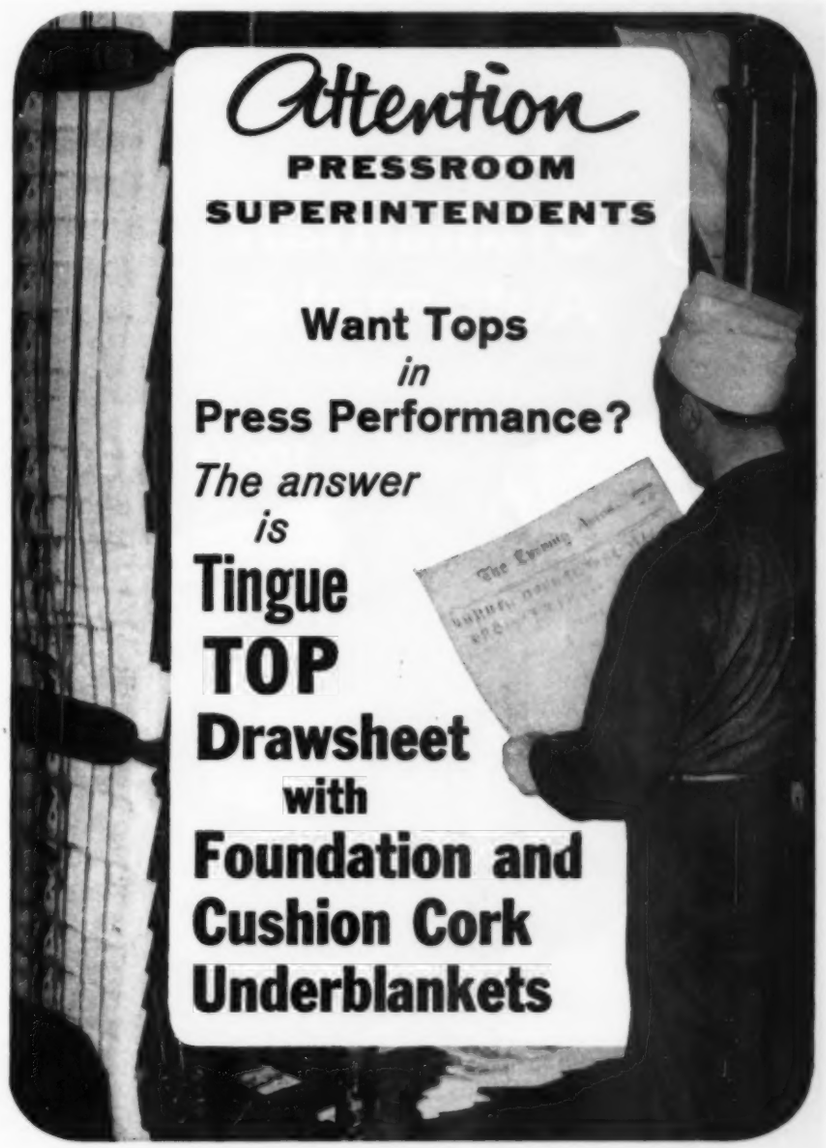
**Screen Process Printing Assoc., Intl.**—1956 Conv., Sherman Hotel, Chicago, Oct. 19-21. Exec. Secy. Robert H. Blundred, 549 W. Randolph St., Chicago 6.

**SNPA (Eastern Div.) Mechanical Conf.**—1957 Conf., Dinkler Tutwiler Hotel, Birmingham, Ala., Aug. 18-20. Secy. John A. Hogg, Southern Newspaper Publishers Assoc., P.O. Box 1569, Chattanooga 1, Tenn.

**SNPA (Western Div.) Mechanical Conf.**—1957 Conf., Hotel Galvez, Galveston, Tex., March 10-12. Secy. Walter Johnson, jr., P.O. Box 1569, Chattanooga 1, Tenn.

**Southern Graphic Arts Assoc.**—1957 Conv., Battle House, Mobile, Ala., April 4-6. Secy. Charles E. Kennedy, 1514 South St., Nashville 2, Tenn.

**Technical Assoc. of the Graphic Arts**—1957 Conf., Ben Franklin Hotel, Philadelphia, May 13-15. Secy.-Treas. Phillip E. Tobias, 140 N. 6th St., Philadelphia 6, Pa.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# NEWS ITEMS

**ITCA Executive Director**—On September 1, W. E. Switzer became executive director of the International Typographic Composition Assoc. and will be in charge of the service and promotional activities of the ITCA. Switzer had formerly been assistant secretary. Frank M. Sherman, who was secretary and executive director, will continue as secretary until the annual meeting of the ITCA Executive Committee, Oct. 10 in Toronto, Canada, at which time the committee will act upon his resignation.

SOMMER

**Sommer Joins Rudisill**—Donald E. Sommer recently joined Rudisill and Company, Lancaster, Pa. printers and lithographers, as vice president. Sommer was formerly the technical director of the Printing Industry of America.

**Herman R. Freund,** 70 yr. old former vice president and chief engineer of Intertype Corporation, died of a heart attack Aug. 18 at Doylestown, Pa. Freund was the designer of the Intertype Fotosetter machine and designed many of the leading type faces used by newspapers.

**Clawson Joins H.-S.**—William T. Clawson recently joined Harris-Seybold Company as sales promotion manager, according to Ren R. Perry, vice president of sales. Clawson had previously been director of marketing for The Miller Printing Machinery Co. It has been announced Clawson will be assigned full time to a continuing appraisal of customer service. He will also assist in industry activities and communications, and will advise on sales-service functions in line with the printing industry's changing needs.

CLAWSON

**George A. Heintzemann,** president of Dexter Folder Co., was recently elected a member of the board of directors of Miehle Printing Press & Mfg. Co. He has been Dexter's president since 1940.

SILLIMAN

**ATF Vice President**—Milton J. Goger, president of American Type Founders, announced the board of directors named John V. Silliman, vice president in charge of operations and a member of the board of directors. Silliman has been with ATF for 20 yrs.

**Two Appointed by Sun Chemical**—The Sun Chemical Corp. recently announced that Donald Reed and Dennis Casey have joined the sales staff of its General Printing Ink Co. division as Eastern district representatives. Reed will headquarter in Long Island City and cover New York, New Jersey, Pennsylvania and parts of Connecticut. Casey joins the Cleveland office of G.P.I. and his territory includes Ohio and parts of New York, Pennsylvania and West Virginia.

REED CASEY

THUMIM

**Lawson Promotes Thumim**—Carl Thumim was recently appointed vice president in charge of manufacturing as announced by David W. Schulkind, president of E. P. Lawson Co. Thumim will continue in his capacity as chief engineer in addition to his other duties.

**Three Named to IPI Division**—The IPI Division of Interchemical Corporation has named Raymond F. Lecture to the post of varnish laboratory supervisor, and Fred Rosenbloom to maintenance supervisor, at the firm's Cincinnati, O., factory. Robert S. Czeropski has been appointed supervisor of the product development laboratory in Chicago.

ROSS

**Cottrell Adds to Sales Force**—Frank A. Ross recently joined the engineering department of The Cottrell Company as sales engineer, according to Joseph E. Meyer, vice president for engineering. Ross had previously been chief research engineer for Miller Printing Machinery Co.

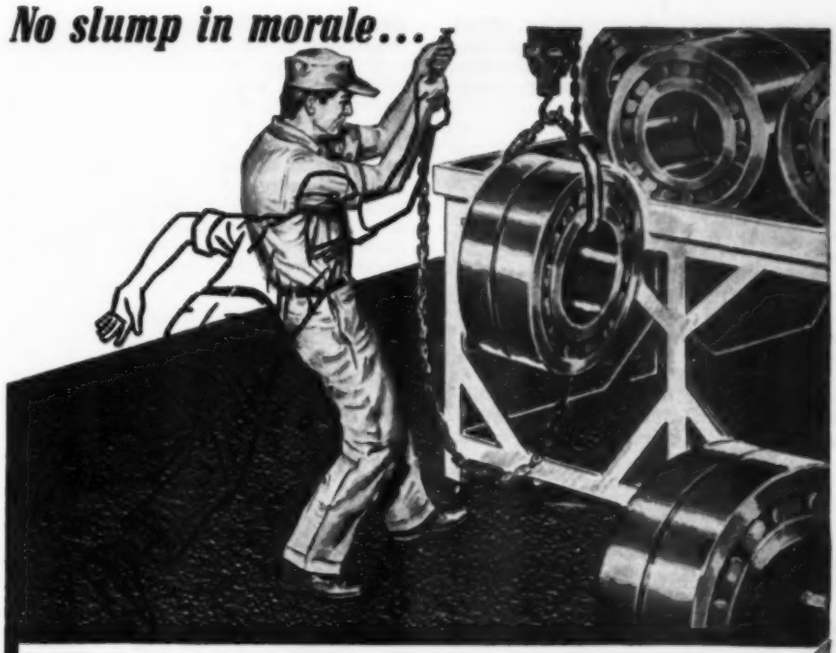
**Sales Agent for Norman Mack Associates**—The appointment of Van Son Holland Ink Corp. of America as exclusive sales agent of all products of Norman A. Mack Associates, Inc., was announced recently. The Stamford, Conn., office of Mack Associates is being moved to the main plant in Connecticut and sales activities are at the Mineola, N. Y. office of Holland Inks. Norman A. Mack, president of the firm, moved his office to Mineola where he will head the newly organized Research and Development Div. of the Holland Ink Co.

**Two Miehle Appointments**—James H. Hayes has joined the Miehle Printing Press and Mfg. Co. as manager of the Book and Publication Dept. according to Carlton Mellick, sales vice president. Hayes will work with book and publication printers. Also

HAYES

HIRST


*No slump in morale...*



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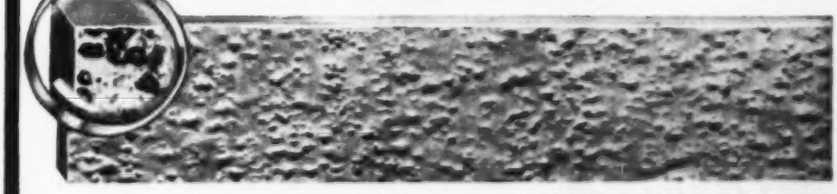

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announced was that Robert Hirst joined the firm as sales representative. He was assigned to the Los Angeles office after completing training in Chicago.

**Theodore A. Serrill,** who has been with the Pennsylvania Newspaper Publishers' Assoc. for 13 yrs., will become executive director of the Washington (D. C.) Publishers Assoc. on November 1. A successor to Serrill will be chosen at the next meeting of the PNPA Executive Committee scheduled on the eve of the association's convention in Philadelphia, October 11-13, Rolland L. Adams, president of PNPA and publisher of the Bethlehem (Pa.) *Globe Times,* has announced. Serrill, general manager of PNPA since February, 1950, will succeed Peyton R. Evans, a Washington, D. C., attorney who is retiring after 16 yrs. as executive head of the organization which represents the Washington (D. C.) *News,* Washington (D. C.) *Post & Times Herald,* and the Washington (D. C.) *Star.* Serrill has just completed a term as president of Newspaper Association Managers, Inc., which comprises the executives of state, national and regional newspaper trade associations.

**BMI Executive Director**—The appointment of Malcolm H. Frost as executive director of the Book Manufacturers' Institute, Inc. is announced by Stanley G. French, president. Frost succeeds the late Hon. J. Raymond Tiffany.

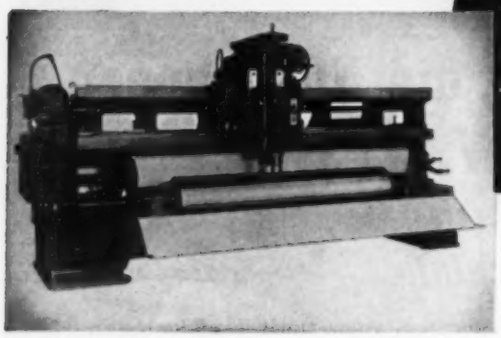
**Morrison Named by Goss** — Announcement of the appointment of Edgar G. Morrison as sales manager of The Goss Printing Press Co. and its subsidiaries was made by C. S. Reilly, vice president of sales. Morrison joined the Goss Company in 1935.

MORRISON

**William H. Wood** recently left the Harris-Seybold Co., where he was director of research, to do general consulting work in the Graphic Arts industries. Wood established the Harris-Seybold Research Laboratory in 1936.


For GRAVURE at its Finest

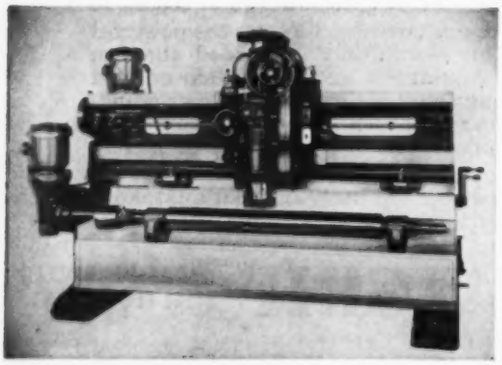
FINISH YOUR CYLINDERS MIRROR SMOOTH THIS MODERN WAY



Model "HL" Grinding and Polishing Machine. Taking cylinders up to 70" circ. x 89" face.

THE Ultimate IN PRECISION GRINDING - POLISHING

These machines are precision built in two standard sizes. Grinding and polishing is done with special "Intaglio" stones using water as a coolant, thus eliminating all dust. The resulting finish is finer than obtainable with paper and is completed in half the time. The grinding and polishing stones are mounted on a chuck plate which is attached to a spindle having a combination concentric and eccentric motion. The eccentric motion actually shears off the grain or roughness, leaving a smoother surface than is obtainable otherwise. The concentric motion combined with a special adjustable "floating" action is used for finishing the cylinder to a smooth, highly polished surface.



Model "HS" Grinding and Polishing Machine. Taking cylinders up to 38" circ. x 52" face.

Each machine is completely wired and run on a semi-production basis before it is shipped to the customer. Extensive periodic inspections are carried on during this interval to assure years of trouble-free operation.

Additional details on "Intaglio" stones furnished on request.

STANDARD PROCESS CORPORATION

28 Years of Quality and "Know-How"

Manufacturing Gravure Equipment and Supplies

2704 WEST ROSCOE STREET
CHICAGO 18, ILLINOIS

UNDERWOOD

**Didde - Glaser Addition**—Didde-Glaser, Inc., recently announced addition of John C. Underwood to its Installation and Service Staff. Underwood was employed by Didde-Glaser previously, in 1953-54.

**Elected President**—Martin M. Reed, president of Mergenthaler Linotype Co., announced election of Harry C. Anderson to the presidency of Davidson Corporation, a subsidiary of Mergenthaler.

ANDERSON

**Goss International Officer**—Appointment of Gaston F. Ste. Marie as vice president of Goss Printing Press Intl., S. A., has been announced by Pres. C. S. Reilly. He will be stationed in Panama, Republic of Panama. A. J. Drohn, vice president of International, directs operations from Chicago. Prior to joining Goss, Ste. Marie was manager of National Paper & Type Co., which company will continue to represent Goss International Latin American countries.

PATTERSON

**Chicago Sales Appointment**—M. D. Patterson was recently appointed to the Chicago Sales Department of Sam'l Bingham's Son Mfg. Co. Announcement was by Kenneth Butler, vice president of the company.

BURGET

**Russ Burget** has been appointed manager of the Oklahoma City, Okla., roller factory by Sam'l Bingham's Son Mfg. Co. as announced by Kenneth Butler, vice president of the firm. Burget has been associated with the company for over 20 yrs.

**H.-S. Latin America Representative**—N. H. Quayle has been appointed Harris-Seybold Co.'s first special sales representative to Latin America. For the past several years Quayle has been with the company's International Division. He will now work with Latin American firms in Mexico, Central America and the Caribbean.

**Danish Engineer Joins RIT**—Sven Ahrenkilde, a Danish civil engineer working in the Graphic Arts field, recently joined the Graphic Arts Research Div. of Rochester Institute of Technology. He will be in charge of its Photographic Laboratory, primarily working with problems related to color reproduction. He was formerly employed at the laboratories of the Graphic College of Denmark.

AHRENKILDE

KIRSTEIN

**Named Sales Prom. Manager**—The Chandler & Price Co. announced appointment of Merle D. Kirstein as manager of sales promotion. His headquarters will be at Chandler & Price general offices in Cleveland.

**Gegenheimer Appointment**—John A. Alexander, jr. recently joined William Gegenheimer Co., Inc. as sales engineer. Alexander is an industrial engineering graduate of New York Univ.

ALEXANDER

**Mergenthaler Director**—Robert T. Rinear, a director and vice-president of the General Precision Equipment Corp., has been elected to the board of directors of the Mergenthaler Linotype Co. He succeeds Donald H. Sherwood, a director since 1947, who resigned because of increased responsibilities in other business affairs.

**Worthington Associates Formed**—Emory W. Worthington has resigned as vice president of George F. Motter's Sons, York, Pa. Subsequently he has formed a company to be known as Emory W. Worthington and Assoc., with headquarters at 20 So. Findlay St., York, Pa. The company will specialize in engineering and consulting services to equipment manufacturers and to printing plants. Also, in cases where a printing plant does not maintain engineering personnel, the Worthington services will be available. Identified with Worthington in the new company are the following: Clive H. Porter who was in charge of the drawing room at Motter's and who was formerly connected with R. Hoe & Co. as development engineer; Porter received his training at Hoe-Crabtree in London, Eng.; he has had considerable experience with special machinery for the Graphic Arts but has stressed newspaper presses particularly. Albert T. Zurick who was in charge of development at Motter's was formerly connected with R. Hoe & Co. for many years in the design of magazine presses and folders. Joseph A. Slobey, formerly mechanical superintendent of Jersey City Printing Co., has also joined the Worthington staff. His experience has been in production and operational problems together with bindery equipment and telephone book production.

## "NICE JOB, BILL!"

It's made on ZOMO-ZINC, naturally! ZOMO-ZINC offers you *GUARANTEED* . . . uniform composition — accurate gauge — flawless finish.

What these features have meant in "Nice Jobs" is best proved by the big demand for ZOMO-ZINC.

More clean smooth etching ZOMO-ZINC is sold and used than any other engraving metal in the world!

*When looking for nice jobs — use*
ZOMO ELECTRIC ZINC!

*"It's Great to Work with*
**ZOMO-ZINC!"**

**ZOMO ELECTRIC ZINC · A-Z ELECTRIC ALLOY**
**ZOMAG · MICRO-METAL**

SWANSON

**Didde-Glaser, Inc.** recently announced appointment of Thomas F. Swanson to its home office sales staff. He will coordinate sales from the Didde-Glaser line. Prior to joining Didde-Glaser, he was with Sears, Roebuck & Co.

**Standard Register Appointment**—The appointment of Dr. Robert T. Olsen as assistant director of research for The Standard Register Co. was announced by John T. Davidson, vice president of engineering and research. Olsen will serve under Dr. W. A. Yackley, director of research. Olsen was formerly a research engineer for the Celotex Corp. of America. Moore.

**New York and Penn Distributor**—Appointment of the R. P. Andrews Paper Co., Washington, D. C., as a distributor for the New York & Pennsylvania Co., was announced by Marshal M. H. Dana, New York and Penn sales manager. The distributor will handle New York and Penn's line of book and magazine papers.

**Veldon S. Dickerson** has been named general foreman of the composing room of the Indianapolis (Ind.) *News* and *Star*, W. A. Dyer, jr., general manager, announced recently. George L. Schumaker became day foreman, succeeding Dickerson, and H. Wilbur Smith has been named assistant day foreman. Dickerson began work on the *News* in 1923 as office boy.

NACK

**Nack Named Sales Manager**—Howard A. Nack has been named sales manager for the Printing Equipment Div., Hamilton Manufacturing Co., announced W. A. Friedrich, vice president in charge of sales. Nack has been with Hamilton since 1939 and the past 10 yrs. has been sales assistant in the division. Nack replaced Roger Perry, who resigned to enter his own business.

**Howard Flint Ink Co.**

*Gravure · Letterpress · Lithographic · Flexographic*

ATLANTA · CHICAGO · CLEVELAND · DENVER · DETROIT · HOUSTON
INDIANAPOLIS · LOS ANGELES · MINNEAPOLIS · NEW ORLEANS · NEW YORK · TULSA


## Literature

**(Continued from Page 18)**

of roll fed cutter-creaser equipment available to the carton manufacturer. Design and operation of individual components are presented in the booklet. Types of dies and recommended uses are given. Contained in the booklet are 29 illustrations and drawings of complete presses as well as individual components. Also included are typical die layouts, examples of properly cut and creased cartons and change gear specification tables. For a copy, please mention PEE No. 237L in your request.

### Miscellaneous

#### PERIODIC PAPER SAMPLES

Coated paper samples featuring four color and monotone halftones, and containing grade descriptions and ordering information, have been announced by Kimberly-Clark Corp. Called *Periodic Samples*, they are issued on a regular basis three times a year. Samples are dated and color coded and are available in either 6 in. by 9 in. or 8½ in. by 11 in. file folders that are also dated and color coded. For copies of the eight sample folder, please mention PEE No. 254L in your request.

#### NEOPRENE BELTING

General Rubber Corp. has released a four page bulletin on its line of Lightweight Neoprene Belting. The belting is available in four styles, Custom, Sani-Flex, Multi-Duty and Rufftop, in various widths, lengths and thicknesses for light duty horizontal or inclined conveying elevating and power transmission operations. In the two color brochure each of the styles is illustrated and described. One page in the brochure is devoted to a data chart of Neoprene Belting specifications. For a copy, please mention PEE No. 196L in your request.

#### HUMIDITY INSTRUMENTS

The Bristol Company's complete line of humidity recording and controlling instruments and accessories is illustrated and described in a bulletin released by the company. Contained in the two color, 22 page bulletin is information on indicating, recording, and automatically controlling wet and dry bulb instruments, and psychrometers (direct reading type). Also included in the bulletin are conversion tables of wet and dry bulb temperatures and psychrometric tables. For a copy, please mention PEE No. 246L in your request.

### MOTOR BUYING INFORMATION

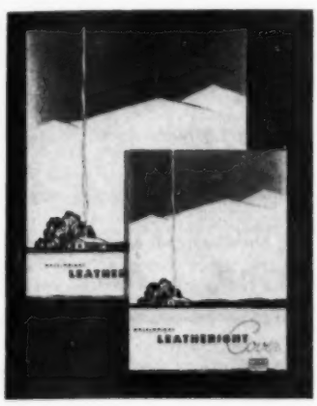
Included in bulletins GEC-1026A and GEC-1027A, each 11 pages, is buying information on a selected group of General Electric motors. Information incorporated in the bulletins is application data, ratings and prices for fractional horsepower motors, integral horsepower polyphase and single phase induction motors, motors and control for part winding starting, gear motors and resilient base integral-horsepower induction motors. For copies, please mention PEE No. 248L in your request.

### STAUDE PACKAGING MACHINES

The Staude line of machinery for packaging industry applications is the subject of a 6-page, 9 in. by 11 in., two-color folder. Illustrated and described are the Staude Master gluing machine, the Staude Gladiator window applicator, the Aristocrat gluer, the Sterling envelope maker, the partition slotter, the rotary dewaxer, the Alpha and Beta wrapping machines and other pieces of packaging equipment. Capacities of most units are given. For a copy, please mention PEE No. 235L in your request.

### LEATHERIGHT COVER PAPER

A Demonstration Portfolio and matching Sample Book on Wheelwright Leatheright Cover were recently produced by The Mead Corporation. Portfolio cover and six inserts




were produced letterpress, offset and screen process to illustrate the three printing processes. Each insert demonstrates a suggested use such as for menu covers, booklet and brochure covers. Sample book is used to show the seven colors available: Blue, brown, buff, gray, green, red and ivory. For a copy, please mention PEE 212L in your request.

### MAGNETIC MOTOR STARTER

Cutler-Hammer, Inc. has released a four page bulletin in which the several new features of its Bulletin 9586 a.c. magnetic motor starter have been included. The bulletin, called *The Starter Which Staggered the Imagination*, is well illustrated, and descriptions of the new features are included. For a copy, please mention PEE No. 190L in your request.

### QUADRUPLE BOOK FOLDERS

The Dexter Folder Co. recently announced a six page bulletin in which is covered its Model N Quad and Duplex Quad book folders. In the two color brochure is included overall illustrations of each model and such operating data as maximum and minimum size sheets that can be folded, maximum and minimum sizes of signatures formed, number of signatures delivered per hour, etc. On a concluding page is given floor space diagrams, electrical specifications and shipping data for both models. For a copy, please mention PEE No. 186L in your request.

### PACKAGED CONTROL

The bulletin, *Pan-A-Trol, Packaged Control For Industry*—Bulletin GEA-6334, is descriptive of General Electric Co.'s centralized control panel for applications such as on conveyors, presses and packaging machines. Included in the 12 page bulletin are application information and lists of special Pan-A-Trol benefits in engineering assistance, design, installation, maintenance, and field service. Types of devices used for a typical Pan-A-Trol packaged control is covered with descriptive data. Also included in the four color publication is a case history of how Pan-A-Trol met special customers' requirements. For a copy, please mention PEE No. 245L in your request.

## *Equipment Sales and Installations*

# Reports

## Goss Installation

Mexico's first Headliner newspaper press, manufactured by The Goss Printing Press Co., will be installed soon by Mexico City (Mex.) *Excelsior*. In 1539, Mexico City received the first printing press in the Western hemisphere. The five unit Goss press is equipped with Tension Plate Lockup. The *Excelsior*, a 39 yr. old morning daily, has a circulation of 120,000 with 145,000 Sundays. The evening daily, *Ultimas Noticias de Excelsiro*, has a circulation of 77,000.

## Miehle Installations

The Twentieth Century Press, Chicago, recently installed a Miehle No. 38 two color Offset Press, manufactured by Miehle Printing Press and Mfg. Co. Firm specializes in printing financial forms.

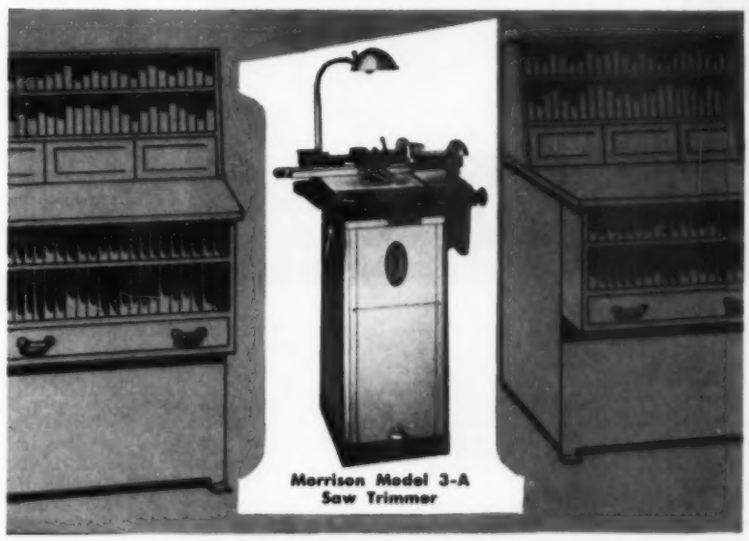
The Meyercord Company, Chicago, recently installed a Miehle No. 61 four color Offset Press. The company is one of the largest decal printers in the country.

With the recent installations of two Miehle No. 38 two color Offset Presses, the J. C. Dillon Co., New York, is now equipped to produce offset, letterpress and gravure. The Dillon Company also has several Miehle 44 in. sheet-fed presses for its gravure printing and Miehle Letterpresses for its letterpress printing.

The Carl Gorr Printing Co., Chicago, recently installed its second Miehle No. 41 two color Offset Press. These presses are the first Miehles in the plant's offset facilities.

The Litho Studio, Inc., New York, N. Y., recently moved to a new location. Included in the firm's expansion was the installation of a Miehle No. 38 two color Offset Press.

The Bureau of Standards of Purchases for the State of New York in Albany, N. Y., has



Morrison Model 3-A Saw Trimmer

**ONE Morrison Saw Trimmer to EVERY TWO Make-Up Tables . . .**

*. . . The Nation-wide Standard of Composing Room Economy*

**MORRISON MODEL 3-A SAW TRIMMER**

Accepted standard in most composing rooms — versatile, fast and accurate. Features include "Behind the Gauge" workholder, 73-pica gauge, 135-pica extension gauge, miter and line-up gauge, right and left hand miter vise, saw grinder, trimmer grinder, and others.

Leading newspapers in New York, Buffalo, Chicago, Milwaukee, — across the nation — are changing "walking time" to "working time" in their composing room with Morrison Saw Trimmers . . . Adding a new Morrison Saw Trimmer every time they add make-up tables. They save wasted steps, time, and money by bringing trimming within a step or two of composition. More than that, they've proved that a Morrison is faster, more accurate, easier to use, safer — and more economical to operate.

*Write for catalog on ALL Morrison Saw Trimmers — as well as Morrison Slug Stripper, Plate Beveler, Router and Type High Planer, Strip Material Cabinets, Waste Receptacles, Universal Saw Blades, Router Bits, and Jigsaw Blades.*

THE Morrison COMPANY
PRECISION MACHINES FOR THE GRAPHIC ARTS INDUSTRY

**SPEED PRODUCTION WITH RICHARD'S**

**SAWS • ROUTERS • MORTISERS**

**Stereotype Saws Three Sizes**

**Curved Plate Routers Tubular or Semi**

**Flat Plate Routers Three Sizes**

**Plate Mortisers Bench or Pedestal Models**

**Special Routers Built To Order**

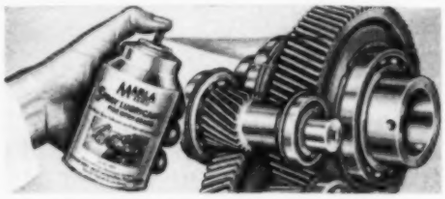
**J. A. RICHARDS COMPANY**

903 N. PITCHER STREET • KALAMAZOO, MICHIGAN



**M A R L A**

**OPEN GEAR SPRAY LUBRICANT**



*Use on all Gears not running in Oil*

*Absolutely Nothing Else Like It!*

**OUTLASTS ORDINARY LUBES 5-to-1**

*Sticks to Metal*

1. **ECONOMICAL**—Spray container reduces lubrication time. Long lasting film. One can covers approximately 25 sq. ft. of surface with no waste.
2. **HEAVY DUTY**—The finest extreme pressure adhesive lubricant there is for open gears.
3. **EASY-TO-USE**—No fuss . . . no muss. Ease of application encourages and assures complete lubrication of open gears.
4. **CLEAN**—No drip . . . no throw off . . . no clean up of excess lubricant. Will not drip in hot or steamy areas.
5. **SPRAY**—Assures perfect lubrication even to the most hard-to-get-at areas.
6. **HANDY**—Marla Spray Lubricant can be carried easily and is always ready for use. Eliminates the brush, paddle or any pre-heating.
7. **VERSATILE**—A superior lubricant also for cams, reciprocating actions, mono rails, guides, chains, sprockets and cables.

*Prices F.O.B. Your Plant (U.S.A. and Possessions)*

*Case of Six—12-ounce Cans . . $10.74 Case of Twelve—12-ounce Cans . . $21.00*

**Jobber Inquiries Invited — Manufactured & Guaranteed By**

**ROTHLAN CORP.** Dept. NBD 3618 Laclede Ave. St. Louis 8, Mo.


authorized the installation of three No. 29, three-roller Miehle Letterpresses.

As a part of the expansion program for printing mental hygiene literature, one Miehle No. 29 Letterpress and one Miehle V-50 have been installed at the Utica State Hospital.

Another Miehle No. 29 Letterpress has been installed at the Publication Division for the University of New York. This press is printing college entrance examinations for New York students as well as other educational forms.

## Equipment & Supplies

**(Continued from Page 36)**

ries 39 Essars are designed to control light output and color temperature. They can also be used to meter the Unitronics integrating flashing lamp, the Eifelite, which is optional equipment. The Essars have linearity of + 2% with a claimed accuracy of better than 0.1% between exposures of identical setting. Range of standard instruments is from 3 sec. to 30 min., with dial settings up to 900 units. For further details, please mention PEE No. 239 in your request.

### Ink for Plastic Films

A high-gloss, water and oil resistant ink for flexographic printing of treated polyethylene, Mylar and Saran-coated cellophanes has been introduced by Bensing Bros. & Deeney. The new ink uses a high flash-point solvent and non-toxic vehicle. Either natural or synthetic rubber plates and rollers may be used with the ink.

Called Safe-T-Brite, the ink, states BBD, prints with a glossy finish on polyethylene film. It has been formulated especially to repel water and is said to have the same degree of moisture-resistance as impervious resin coatings.

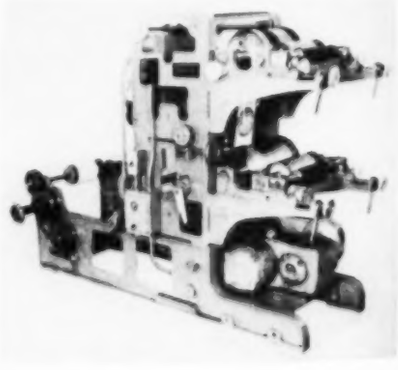
Safe-T-Brite Ink is made in a full range of colors, including white and black, and may be used without alteration on all the films for which it is designed. Further information may be obtained by mentioning PEE No. 226 in your request.

### Electrical Circuit Printing Ink

A silk screen ink for printing etched electrical circuits has been announced by The Craftint Manufacturing Co. Called Craftint-Devoe No. 3 Acid Resist Ink, it is formulated for use in printing circuits of any size for equipment using such circuits. It is said the ink is effective for bringing out intricate details when used with Craftint's Photographic Stencil Film. Other properties claimed are sharp registration, dries fast and hard, and is easily removed with mineral spirits. For further details, please mention PEE No. 232 in your request.

### Helix Flexographic Press

A flexographic press for roll to roll printing on paper, foil, cloth, Cellophane and films was announced by Helix Machine Co. Called the Helix Flexographic Press, it is available for printing one, two, three or four colors in widths up to 40 in. Press speed claimed is up to 300 ft. per min. with standard repeat lengths of 9 in. to 25½ in. Available as optional extras are Anilox inking cylinders, heat rollers, chill rollers, be-



**1956 MODELS**

**BREAKING**

**ALL RECORDS**

***Profit records for YOU . . .***

***NEW FEATURES***

***greatest advance in Folder history***

***. . . doubling your net profits . . . for instance,***

2 folded signatures (from a single sheet fed into Folder) now come out where one came out before—of course in 1 automatic operation. And . . . from a single sheet fed into the Folder—you can have two separate sheets collated and folded together . . . of course in 1 automatic operation.

Thanks to you for ordering $50,000,000. of BAUMFOLDERS, volume production keeps prices down . . . even in these days of high labor costs and high material costs, you can still install a 17½ x 22½ Automatic Bindery complete in one compact life-time "Gold-Mine" . . . that folds; cuts; scores; perforates; collates, etc., etc. for only $85. initial and $47. a month. It will pay-for-itself many times over before you pay for it. No finance charge . . . just simple interest. And other sizes comparable pay-for-itself terms . . . 14 x 20" or 22 x 28" or 25 x 38" or 31 x 46-60".

**RUSSELL ERNEST BAUM, INC.**

615 Chestnut St., Phila. (6) Pa.

*P.S. Someone said,—"he benefits humanity who makes 2 blades of grass grow where one grew before."*



**FAVORED**

**ALL OVER THE WORLD**

Instead of resting on their laurels, however well earned they may be, Wood Dry Mats are subjected constantly to a continuing program of product improvement.

**WOOD FLONG CORPORATION**

**HOOSICK FALLS, N. Y.**

WOOD DRY MATS

ALWAYS UNIFORM

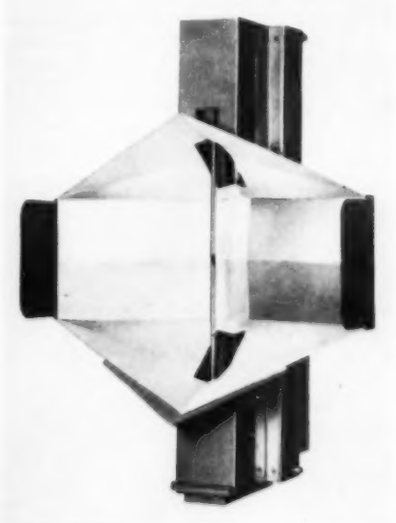
New York City Office

551 FIFTH AVENUE, NEW YORK 17, N. Y.


tween color driers, etc. For further details, please mention PEE No. 245 in your request.

### Printing Lamp for Large Frame

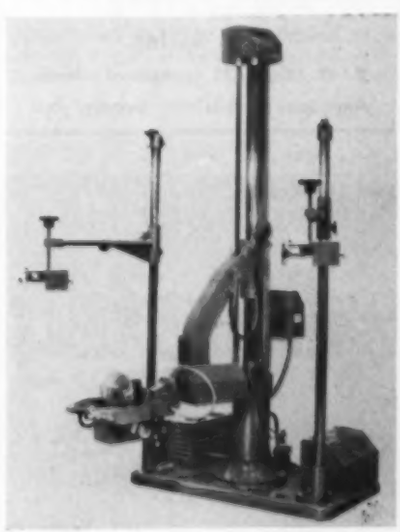
A high intensity motor-controlled printing lamp for large frame use has been developed by Macbeth Arc Lamp Co. The B 1C Constantarc is rated at



140 amp., or approx. 6 kw. Features are a wide spread reflector and a 12 in. trim of high intensity carbons. The lamp is available with either a telescoping type stand or the Macbeth counterbalancing stand. An optional exhaust blower may be installed at the top of the lamp as shown in the illustration. According to the manufacturer, the lamp features automatic arc control and self-compensating transformers to maintain constant light intensity and color temperaturere regardless of fine voltage fluctuations. For further details, please mention PEE No. 238 in your request.

### Paper Counting Machine

Stack Paper Counting Machines, manufactured in various models by Vacuumatic North America, Inc., are for counting large quantities of paper for printers and paper mills, for handling high quality papers in smaller amounts, for ream checking, and for counting new banknotes, travellers' checks, lottery tickets and other small size forms. The Mark VA Stack Paper Counting machine is used to count stacks of paper at the rate of 1500 sheets per min. The control panel is equipped with two buttons, one bringing the counting head to the paper, and the other for starting the vacuum pump which in turn begins the automatic counting cycle. Two loading bays are provided and the Counting Head is swung over to start counting of the next stack. The minimum counting height is 6 in. from the ground. The Suction Blade enters the stack of paper to a depth of 1 in. The model can be used to count paper from 9 lb. onionskin, 17 in. by 22 in., to 36 lb. ledger, 17 in. by 22 in., or book paper from 25 lb. to 100 lb., 25 in. by 38 in. The counter is run by two vacuum pumps, a counting head motor and a vertical drive motor. Counting is done by a fast tilting counting blade. A small hole provides suction, and draws the bottom sheet down away from the stack. A wiper pin moves back and over the sheet corner, and slips the



counted sheet away from the tilting blade. For further details, please mention PEE No. 222 in your request.

*Political views are based on personal opinions and are many and varied. But when it comes to dry mats everyone who has used them agrees . . . for the best — USE BEVERIDGE!*

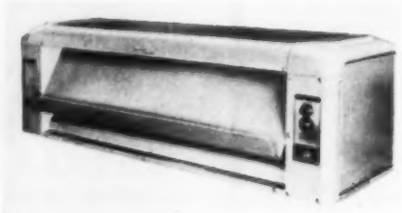
*New Products Division*

**The BEVERIDGE PAPER CO.**

*Indianapolis 4, Indiana*


### Dry Diazo Developer

A line of SpeedMaster Dry-Diazo Developers, designed for offset printers and lithographers, has been announced by Peck & Harvey Mfg. Corp. Ammonia-dry diazo-type color separation proofs can be produced from positive photographic film separations in minutes, states sponsor. The SpeedMaster is operated at a constant speed of 10 ft. per min. Manually operated variable heat and ammonia controls are for proper color tones. A DuPont Teflon perforated screen is said to prevent scratching, sticking or marring of positives. Materials exposed in a vacuum frame, blue print machine, diazo-moist printer, or similar types of reproduction equipment can be developed in the SpeedMaster. The SpeedMaster operates on 115 v., 50 or 60 cy. a.c. Model 20 is for 20 in. width capacity and Model 40 is for 42 in. width capacity. Size of the Model 20 is 36 in. by 20½ in. by 19½ in. high. Size of Model 40 is 60 in. by 20½ in. by 19½ in. high. For further details, please mention PEE No. 233 in your request.




**"BULLDOG"**

**STEREOTYPE DRY MAT MOLDER**

The "Bulldog" Dry Mat molder will produce fine half-tones and solid black printing on stereotype plates. Will outwear ordinary cork molders.

**Available in following sizes:**

21″ x 25″ x ¼″ ..... $18.00
21″ x 25″ x 5/16″ .... 20.00
21″ x 25″ x ⅜″ ..... 22.00

"Bulldog" creeper also available in size 21″ x 25″ x ⅛″ ..... $10.00

**NEWSPAPER SUPPLIES AND EQUIPMENT**

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**P. O. Box 421 Lynnfield, Mass.**

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### Radiator-cooled Vacuum Pump

Two vacuum pumps equipped with a radiator-cooled lubricating system have been announced by Leiman Brothers, Inc. Vacuum produced is 24 in. to 29.9 in. mercury with capacities of 15 to 40.8 cu. ft. per min. at average temperatures of 140 deg. F. Operating temperature is maintained by circulating pre-cooled SAE 30 lubricating oil through the pump. Constant recirculation of the oil through the radiator is said to maintain a constant operating temperature. Pump speeds are up to 800 r.p.m. The Leiman air-cooled vacuum pumps are 30 in. long, 21 in. wide and 27 in. high. The pump is the Leiman two wing model, with steel wings, automatic wing adjusters and cast iron cylinders. Units may be purchased without motor if desired. For further details, please mention PEE No. 201 in your request.

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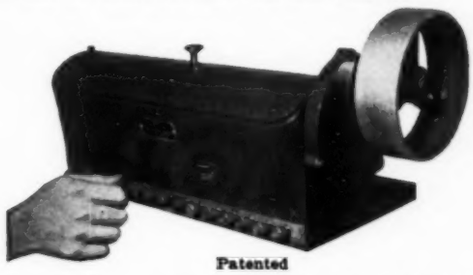

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### Low Pig Dolly

The Nolan Corporation recently announced its Model B Under Mold Pig Dolly. It is constructed with a low, underslung platform (1¾ in. from the floor) to allow greater clearance under a water-cooled ingot mold. Although designed for use with the

Nolan Twin-Type Water-Cooled Ingot Mold, the dolly can be used with other molds of similar dimensions. The dolly is 20 in. wide, 33 in. overall length with ends 9¾ in. high. Truck is equipped with 6 in. diam. ball bearing wheels, and 4 in. diam. ball bearing swivel casters at the rear. Handle is removable. For further details, please mention PEE No. 240 in your request.

### Adhesive for Plates

An adhesive for the electrotype and general printing trade is available for plastic and conventional type metal plate and cut makeup. The material is made by H. A. Callahan, Inc. and distributed by Harry D. Bryan. The product, called 3 Ton Adhesive, consists of a powder and a liquid activator which when mixed is applied to both plate and block. The adhesive is also available in Brushing 3 Ton Adhesive, a form requiring no mixing. Sponsor states the adhesive will not shrink, expand, crack or change shape and is not affected by solvents. It is also stated 3 Ton Adhesive sticks to stone, metal, wood, plastic, rubber and glass. The material comes in two setting times, one which sets in about 5 min. at 70 deg. F., and one which sets in about 30 min. at 70 deg. F. For further information, please mention PEE No. 185 in your request.

### Washington (D.C.) *Post* Ad Frame

An ad frame, designed for the Washington (D.C.) *Post*, has been announced by Foster Manufacturing Co. The Frame is 30 in. wide, by 28 in. deep by 40 in. high. Overhead racks extend forward as they go up. The frame is equipped with a ¼ in. thick

**Universal Expands to New Plant—The move to its new, expanded plant at 715 N. Central Expressway, Richardson, Tex., was announced by Henry T. Honig, president of the Universal Mono-Tabular Corp. Honig said that Universal is now located 12½ miles north of downtown Dallas on U. S. Highway 75. The 7000 sq. ft. plant, designed by architect Jake Anderson, is of masonry construction.**

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***With the Joneses***

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working surface. Directly below the working surface is a removable waste truck on ball bearing wheels. Material enters from cut out on working top. Another feature is a drawer with lock for personal tools. Toe

room is supplied by a recessed bottom. The ad frame is made with steel throughout. For further details, please mention PEE No. 199 in your request.

**Chemically Impregnated Molleton**

Van Son Holland Ink Corp. recently introduced its offset press impregnated molleton, called Impreg Sleeve. The sleeve was developed by Norman A. Mack, research director. According to Mack, Impreg Sleeve's chemical treatment creates a sponge-like action which enables the molleton to retain moisture for exceptionally long periods of time. For further details, please mention PEE No. 247 in your request.

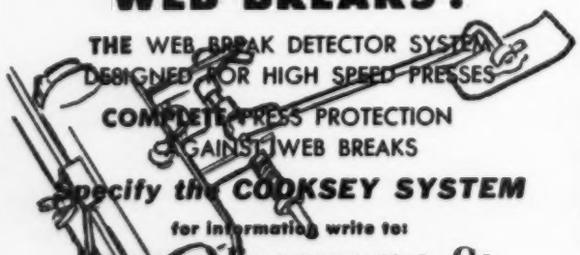
## Autopositive

**(Continued from Page 58)**

the small circle. The halftone negative is removed and replaced with line negative, Fig. 4B. We do not want exposure in the letter area at this time so that portion of the negative is covered. Registration is maintained in the same manner as described above. Again, exposure is with yellow light for a period of 1½ min. If the film were to be developed after this exposure, it would appear as in Fig. 5.

The next step is to build the density back up in the enlarged


**WEB BREAKS?**



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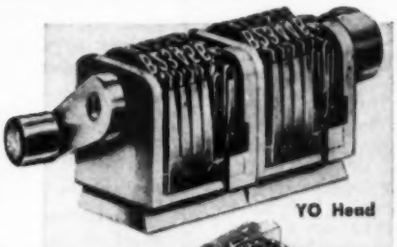
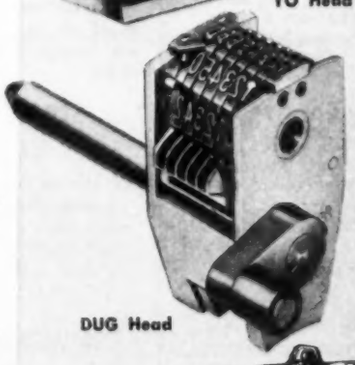


YO Head



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portion of the halftone and in the lettering. The enlarged halftone positive, Fig. 4D, is placed in position over the circle and the flap removed from the lettering. Also, the connecting line and small circle are covered with a flap. Inasmuch as we want to add density at this time, the exposure is made with white light. Using the four reflector floods, exposure time is about 30 sec. If arc illumination is used, the white light exposure time is shortened considerably. During this white light exposure, density is being added as is shown by the first white light curve rising upward as seen in Fig. 1. If the film were to be processed after this exposure, it would appear as in Fig. 6.

Everything is exposed in the negative now except the number "10" and the letter "X". The second line negative, Fig. 4C, is placed in contact with the Autopositive Film and, since we want to destroy any image in this area, again our exposure is made with yellow light. Once again the exposure is for 1½ min. with Kodagraph Sheeting, Yellow.

Referring to Fig. 1, the yellow exposure in some areas is now going down the second yellow curve. In the areas where 10X overlaps density in the circle, the original density was erased by a previous yellow light exposure. The density was subsequently restored by the white light exposure and is again being erased by the final yellow light exposure. In the areas where the 10X overlaps density outside the circle, the density is being erased with its first yellow light exposure. When the film is developed after this exposure, we have our final negative as seen in Fig. 3.

It is readily apparent that Autopositive Film is quite versatile and its use should result in significant savings of time in many cases. It is also evident that this method requires an entirely new and different viewpoint. This is easily acquired by using Autopositive Film in two or three jobs similar to the one demonstrated here.


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# BOOKS

## *Kodak Color Films Revised*

Data sheets on the higher-speed, higher-definition Kodak Ektachrome Films designed for Process E-2, and the new negative films, Kodak Ektacolor, Type S, and the Kodacolor Film are included in a new edition of Kodak Color Films now available from Eastman Kodak Co.

Important aspects of handling Kodak materials are discussed in the text while exposure and filter recommendations for individual films are given in Data Sheets. Altogether there are 72 pages, 12 more than in the First Edition, and almost all the illustrations are new, some in color.

Besides the recently modified and improved films, Data Sheets are included for previous color materials. Subjects discussed in detail are: Types of films, filter data, storage before and after processing, proc-

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essing, viewing, transparencies, critical use, and prints and duplicates.

Copies of *Kodak Color Films* may be obtained from Kodak dealers at 75c each.

## Curtis Pub. Co.

**(Continued from Page 42)**

quirements for each signature or each magazine. At the end of the shift, the amount actually produced is shown, which immediately indicates for any particular press or binder whether or not we are ahead or behind schedule, and how much.

### Monthly and Annual Budgets

We have departmental and divisional monthly and annual budgets.

Budgets may take into consideration changes in cost of materials or labor, or method. We also have monthly and yearly unit cost reports which show us, by division and by magazine, the cost per page or per 10,000 pages. Unit Costs show a comparison of the actual cost in a given month this year compared not only with last year, but, if you wish, any preceding year for the past 25 years. No allowances are made in Unit Costs for any changes. Thus, any progress or failure is quickly evident.

### Detailed Production Techniques

We will now discuss some of the specific things done at The Curtis Publishing Co. to insure quality and speed of production. These have been put into effect over a long period of time as experience dictates.

### Engravings

A right start in printing is half the battle, since ours is a duplicating process. The final printing can seldom be better than a well made proof of the original material. Our objective is to duplicate the original progressive proof as closely as possible. Therefore, all incoming material is inspected and checked, and we ask ourselves this question: With this material, printing as we do, can we match the progressive proof?

Thus, the original material must meet certain specified standards on a number of different points, or the job is doomed from the beginning to be a disappointment.

Among the things that we check engravings for are: Proper construction, depth, freeness from objectionable shoulders and hard edges, register. Have they been proved wet, with the right kind of inks, on the correct paper? Have they been proved without makeready, with the correct impression, proper press roller setting, ink coverage, and in the right direction and rotation of colors?

### Composition

The type makeup of all of our magazines is Monotype or hand with high spacing for better molding properties. We maintain a very careful check on the accuracy of our cast


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### Plate Service

A separate division is responsible for the preparation of original engravings and assembly of the various elements into the pattern plates for electrotyping. They are prepared to meet very exacting molding and register requirements.

### Electrotyping

All of our work is molded in plastic, and all work for our 5-and-5 color equipment is cast curved, using conventional metals and regular casting methods. Most of our work is chromium plated.

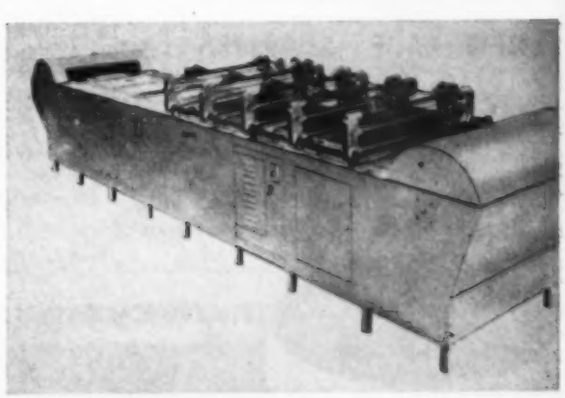
Major accomplishments have been made in the mechanical accuracy of the preparatory and platemaking work, mostly through the improvement of hundreds of small details. Without these improvements, our present performance would not be possible. Our present-day electrotypes are more accurate, give better register at higher speeds, and give longer wear. It is not unusual for a given set of plates to run up to 6,000,000 impressions. All of this means less press down time, less waste, better and more uniform quality.

### Materials

A steady flow of uniform material is required, which means inspecting and checking, servicing and adjustment and development, either by ourselves or in conjunction with our suppliers, of new and improved materials.

We have a large group of engineers, chemists, and technicians engaged in this phase of our work. Through laboratory checks and tests or measurements; through production tests or observation; through examination of production results; and through statistical records, we keep a steady flow of information going to our mills, ink suppliers, roller people and other vendors, as to the working characteristics of their materials.

We know the deviation from stand-



**Multi-Color Silk Screen Press** — A multi-color screen press, manufactured by American Automation, Inc., is operated on a conveyor principle. An automatic stop motion can be set to permit the movement of carrier platforms in single or multiple order over the color screens. The Multi-Color Silk Screen press is used to print cloth or other porous material when the automatic stop motion is set for single order movement. For paper or other hard substance printing, the built-in infrared drying oven must be utilized after one color is printed before next color is applied. The automatic stop motion feature is preset to work in the desired multiple movement order for screening on these materials. An automatic two-way squeegee action can be adjusted to light or heavy pressure. With the conveyor system, additional work units can be placed upon the conveyor to receive the first color. When all platforms have passed through the color screens and dried, every fourth unit will be a finished one. It is claimed that operation is controlled by pneumatic power and is adaptable for use on any screenable surface from tissue thin paper up to a thickness of 6 in. The press is said to produce from 300 to 650 four color prints per hr. Standard model is 4 ft. by 17 ft. 6 in. It is constructed of steel and aluminum castings. Platforms are made of 3/16 in. aluminum plate and are 18½ in. by 38 in. Printing surface is 13 in. by 18 in. For further details, please mention PEE No. 208L in your request.

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ard or average on each roll of paper, each make of ink, each roller used. We are continually testing new, improved, or changed materials and supplies.

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As mentioned before, every individual engraving, every type form and every electrotype, is repeatedly inspected for printability and mechanical accuracy throughout the preparatory process and before press electrotypes are made ready.

On presswork and binding, spot inspection is constantly made throughout the run by the pressmen, by the bindery machine operators and their respective supervisors.

Within each division, each operator is held responsible for his work. We can tell which press crew printed any particular sheet or page, which bindery operator folded it, which binder crew gathered, stitched, and trimmed it.

General inspection is made throughout the run by an independent Inspection Division, responsible directly to the Superintendent's Office.

In addition, we have a separate quality group in the Magazine Press Division office and in the Manufacturing Department office, whose function it is to coordinate these efforts, develop better control and improve quality all along the line.

The Inspection Division makes regular collections from the presses and checks the results against the progressive proofs. It also makes regular inspections in the Bindery. Deviations from standard are immediately noted and referred back to the operators. Revised or corrected sheets are returned, as soon as the correction is made, to the Inspection Division. Any disputes are referred to the Quality Section of the Superintendent's Office.

The Inspection Division also does a cross-section inspection job as the run progresses. And if the variation is too great, it is taken up immediately with the Quality Section. The collection of Inspection Division sheets on each signature is retained, which gives us a good cross-section of the run of each page and is useful in analyzing our quality record and in answering advertisers' or editors' queries or complaints.

We take all complaints seriously—from the readers, the advertisers, and from our editors. All such complaints must be referred to the Quality Section of the Manufacturing Department, and it is their duty to answer all complaints.

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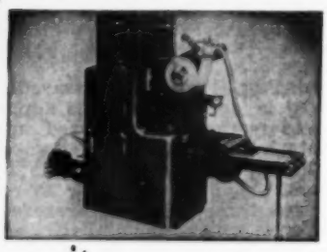

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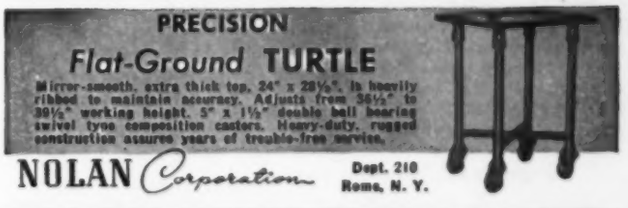
Write for Free Bulletin
J. E. DOYLE CO. 1220 West 6th St., Cleveland 13 Ohio


PRECISION
Flat-Ground TURTLE
Mirror-smooth, extra thick top, 24" x 28½". Is heavily ribbed to maintain accuracy. Adjusts from 36½" to 39½" working height. 5" x 1½" double ball bearing swivel type composition casters. Heavy-duty, rugged construction assures years of trouble-free service.
NOLAN Corporation
Dept. 210
Rome, N. Y.

**WEB DRYING**
**LETTERPRESS • OFFSET**
**GRAVURE • FLEXOGRAPHIC**

HIGH SPEED PRODUCTION
ECONOMICAL OPERATION

*25 Years* **DRYER** *Experience*

**B. OFFEN & CO.**
168 N. Michigan Ave. Chicago 1, Ill.

**What Have You Devised?** As a production and/or mechanical executive, our readers will be pleased to learn about something you have devised to improve plant operation. Just write informally to Editor, PRINTING EQUIPMENT *Engineer*, 1276 W. Third St., Cleveland 13, Ohio.

**Wisconsin March of Progress**—The March of Progress Exposition and Conference, sponsored by the Graphic Arts Assoc. of Wisconsin in celebration of its 70th anniversary, will be held at the Milwaukee Auditorium, Dec. 13-15. The three-day program will feature an equipment and materials exhibit, a management conference and dinner, and letterpress and offset clinics. Shown planning the conference are (left to right): Leora Lee Daehling, GAA public relations director; Art Johnson, GAA executive director; Jim Sensenbrenner, Sensenbrenner Paper Co.; Dick Snyder, Cramer-Kasselt Co.; General Chairman Dick Lebermann, Fakler Printing Co.; and Howard Moebius, Moebius Printing Co. Other committee chairmen, not shown, are: John Clark, Olsen Publishing Co.; Gregg Drow, Quality Press; Cliff Helbert, Marquette University Press; Don Krueger, W. A. Krueger Co.; and Cliff Remington, Milwaukee Electrotype Co.

was almost entirely a craft industry. While craftsmanship is still important to the letterpress industry it is more truly a manufacturing than a craft industry, with heavy emphasis on engineering.

We just could not maintain quality or speeds nor have any assurance of meeting schedules with hundreds of operators adjusting and maintaining their own machines. Nor can we, nor do we wish to rely upon the machine manufacturer to do this.

Without considerable engineering and scientific facilities, personnel and know-how in our particular work, we could not have any reasonable assurance of protecting the company's investment and leading the parade 10 years from now.

A large part of the cost of a press is the drying, cooling, exhaust and electrical equipment and controls—purely engineering matters.

Design, maintenance and repair of machinery and equipment are very important. Quality actually begins here, for unless machines are of good design and well maintained, quality printing is impossible. Good design permits efficient maintenance; good maintenance, better quality.

For this work, over the years we have assembled, trained, and developed a competent group of chemical, mechanical, civil, and electrical engineers, and a large group of our own electricians, machinists, plumbers, and power plant personnel.

### Equipment Maintenance

Maintenance is actually divided into two classes of work—adjusting and repairs.

From the adjusting phase of the work comes the knowledge which enables us to incorporate into our engineering designs, improvements to meet the changing requirements of production, and improve the quality of the finished product.

For example, on these high-speed double five color presses, it was evident quite early that manual control of the web at high speeds was impossible. Crews were unable to produce signatures with good laps, margins and backup register by manual control.

An engineering study had already been made, and we proceeded with the installation of photoelectric equipment to scan and correct misalignment of the web. To go one step further, our own electricians and electrical people assisted in the installation on the first unit, performed the installation themselves on our other units, took courses in electronic work on this type of electronic application, so that we are now able to maintain and repair this type of apparatus on any shift, in any building. Had we not done this we would have been dependent upon the manufacturer. We feel we must be self-sufficient on all shifts.

### Results

Previously, we passed over the item of press web speed lightly—mentioning 1600 f.p.m. This speed is being achieved and even exceeded regularly. It has even been accomplished with large centerspreads. It is being done with electrotypes made from conventional electrotype metal, cast in the normal way on regular casting equipment. It is being done without plate treatment or press makeready in the accepted sense. The plates are mounted on regular spiral grooved cylinders.

Let's convert the 1600 ft. to sheets and round out the figures for easy calculations—let's say in a sheet size 24 in. by 36 in.

At 1600 ft. per min. this means 48,000 sheets per hr., twice the 36 in. width, or 96,000 sheets an hour 36 in. wide.

They are printed both sides, which means that the production is equilvalent to 192,000 sheets printed one side.

Let's for a moment disregard the additions for the extra width and the second side, and come back to the 48,000 sheets an hour. This is almost 50 times as fast as the 800 to 1000 sheets an hour, which is not uncommon in the industry today.

Very few industries, after several hundred years of evolution, have then had an increase of 25 to 50 fold in their processing performance. Offhand, I can't think of a single major manufacturing industry!

We are very proud of the part our company has played in this advance.

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### OCTOBER 1956

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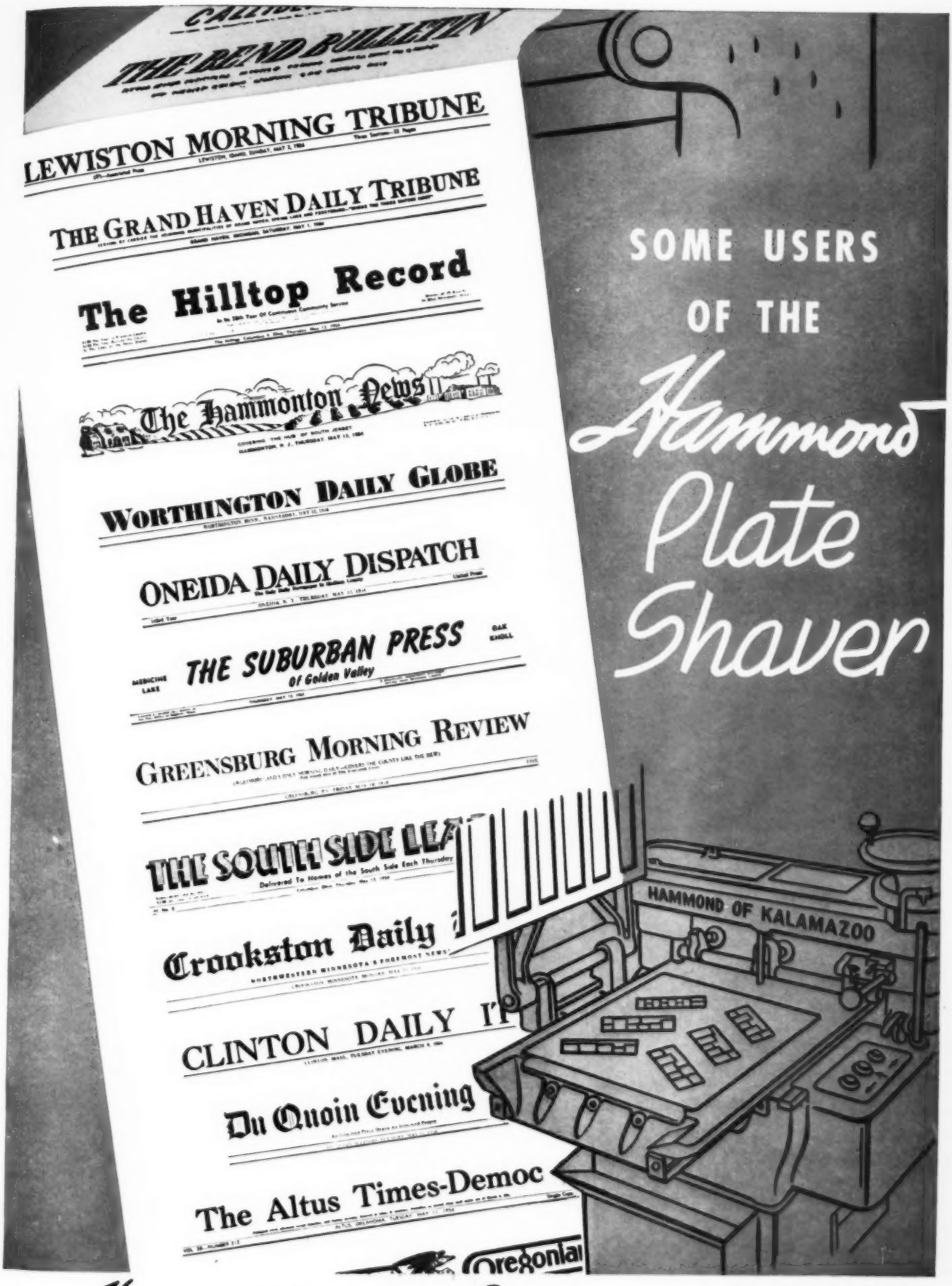
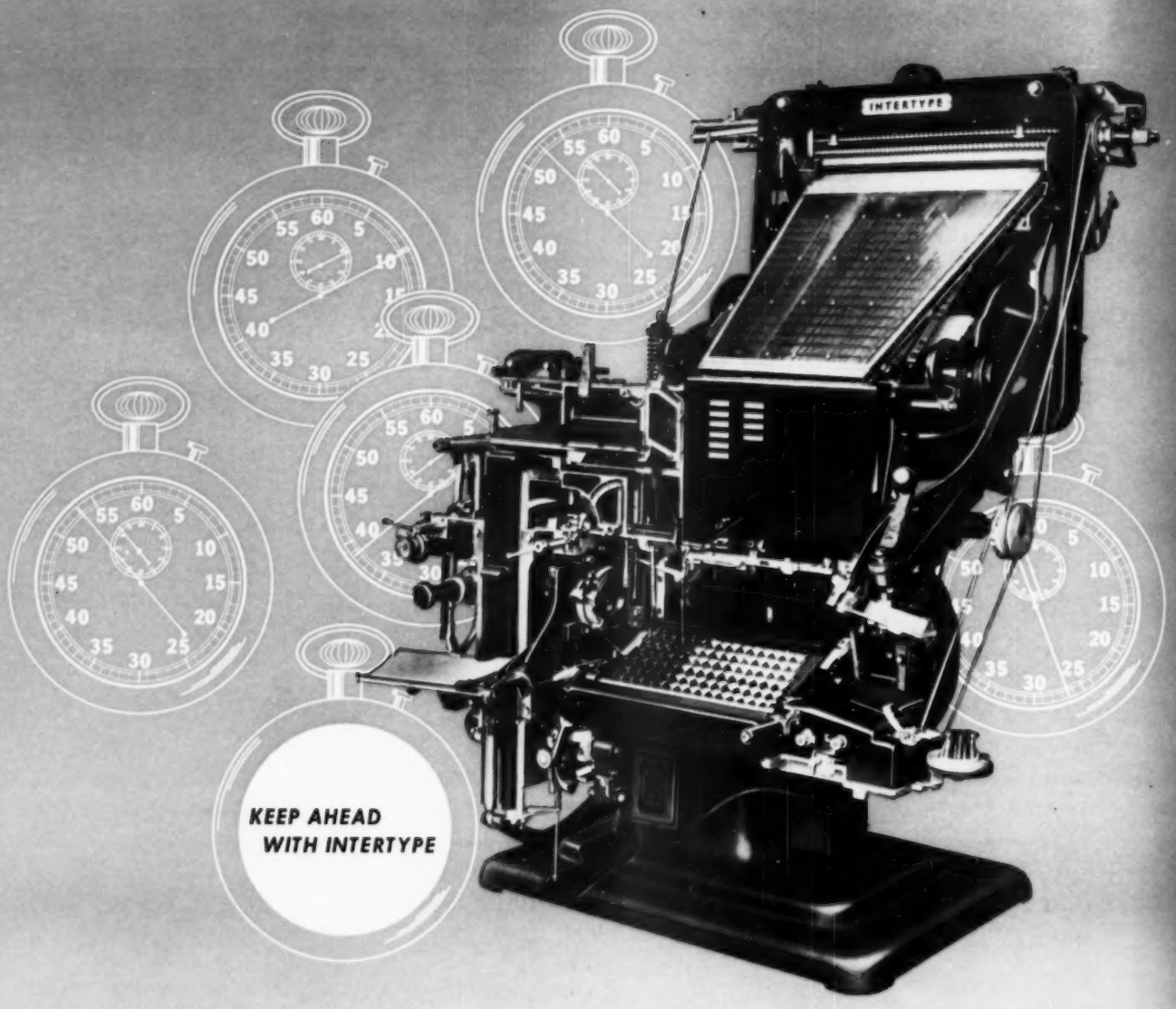

Hammond Machinery Builders INC.

1604 DOUGLAS AVENUE
KALAMAZOO, MICHIGAN




# Why do INTERTYPE HI-SPEED Machines give you MORE PRODUCTION?

***BECAUSE . . .***

Intertype Hi-Speed machines are available with not one, not two, not three, *but up to four magazines.* Do you realize what this might mean next year or in the near future if you wish to add or expand beyond the one or two magazine capacity of the machines you initially buy? *No one but Intertype* can give you this flexibility in capacity.

Visilite transparent magazines, the lightest made by anyone, provide an "at-a-glance" check of every matrix in every channel. This allows for quick inventory and instant location and removal of stuck mats. Visilite magazines, an *exclusive* Intertype feature, save a lot of time in high speed typesetting.

***Do you realize the importance of these Intertype Hi-Speed features in TTS operation and maintenance?***

**Special spaceband guide** prevents bands from tipping forward out of assembly elevator.

**Hydraulic cushions** assure smooth delivery, transfer and distributor shift actions even at top operating speed.

**Assembler slide brake jogger,** adjustable for various operating speeds, prevents last matrix in line from leaning and thereby causing a stoppage.

**Assembler slide safety** stops assembly of matrices when an overset line occurs, prevents mats from jamming in the assembler.

**Tight line stop** prevents damage to the last matrix when a line is overset. Adjustable for any measure from 5½ to 30 picas by picas and points.

**Loose line safety** automatically stops machine and operating unit, prevents following line from entering delivery slide, which permits manual adjustment and casting of loose line, thereby eliminating missing lines in galley.

**3-pitch distributor screws,** exclusive with Intertype, return matrices to the magazine faster. This increases production.

**Intertype Hi-Speed machines give you *more slugs* in the galley at the end of the shift**

## INTERTYPE CORPORATION

**360 Furman Street, Brooklyn 1, New York**

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***In Canada:* Toronto Type Foundry Company Ltd., Toronto, Montreal, Winnipeg, Vancouver, Halifax**

Set in Futura family